

Installation and Service instructions for heating engineers

VIESSMANN

Vitosolic 200

Electronic temperature differential control unit for solar heating systems

See "Applicability" on the last page.



VITOSOLIC 200



Safety instructions



Please follow these safety instructions closely to prevent accidents and material losses.

Safety regulations

Installation, commissioning, inspection, maintenance and repairs must only be carried out by a competent person (heating engineer/refrigeration specialist/installation contractor).

Observe all current safety regulations as defined by DIN, DIN EN, DVGW and VDE (or local regulations).

See also the safety instructions sheet in the Vitotec Technical Guide folder.

Before working on the equipment/heating system/solar heating system, isolate its mains electrical supply (e.g. by removing a separate mains fuse or by means of a mains electrical isolator) and safeguard against unauthorised reconnection.

Earthing/lightning protection of the solar heating system

Install an electrical conductor on the pipework system of the solar circuit in the lower part of the building, to comply with VDE or local regulations.

Connection of the collector system to a new or existing lightning protection facility or the provision of local earthing should only be carried out by authorised personnel, who must take into account the conditions applicable on site.

Repair work

It is not permitted to carry out repairs on parts that fulfil a safety function. Use only original Viessmann spare parts, or equivalent parts that have been approved by Viessmann.

Commissioning

The initial start-up must be carried out by the system installer or a designated commissioning engineer. All actual values should be recorded in a commissioning/service report.

Instructing the system user

The system installer must hand the operating instructions to the system user and instruct him/her in the operation of the system.

Safety instruction

In this instruction manual, this heading denotes information which must be observed to prevent accidents and material losses.

 *This symbol denotes information which must be observed to prevent material losses.*

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General notes

Over the following pages, the methods of operation have been described, and the installation has been depicted as different schemes. A summary is provided which lists essential control equipment. The temperatures stated are guide values; other values may be set to meet particular requirements. The circulation pumps referred to in the examples (contained in Solar-Divicon) are AC pumps.



Safety instructions

With temperatures higher than 60 °C, DHW temperature must be limited to 60 °C by installing a mixing device, e.g. a thermostatic mixing valve (DHW cylinder accessory). The mixing equipment does not prevent the risk of scalding at the tap. The installation of a mixer tap at the draw-off point is required.

Additional DHW heating function

According to DVGW W551/W552, systems with larger cylinder capacity than 400 litres (incl. the solar preheating stage) should be pasteurised daily, i.e. the entire water content must be heated to 60 °C once each day.

To meet this requirement, we recommend that the system is heated up, preferably late afternoon, to ensure that the lower part of the cylinder or the preheating stage is cold again following the expected hot water consumption (in the evening and the following morning) and can, therefore, be heated up again by solar energy.

Abbreviations

KW	Cold water
WW	Hot water
RL	Return
VL	Flow

System design 1

Dual-mode DHW heating with Vitocell-B 100 or Vitocell-B 300 DHW cylinders

DHW heating without solar energy

The upper indirect coil of the DHW cylinder is heated by a boiler. The cylinder thermostat with cylinder temperature sensor ⑥ of the boiler control unit switches cylinder loading pump ⑦.

DHW heating with solar energy

Solar circuit pump ④ is switched ON and the DHW cylinder is heated, if a temperature differential higher than temperature differential ΔT_{on} is measured between collector temperature sensor ② and cylinder temperature sensor ③.

Pump ④ is switched OFF if

- the actual temperature falls below shutdown temperature differential ΔT_{off}
- the electronic temperature limit (safety shutdown at 90 °C) set at the control unit or that set at the high limit safety cut-out (if required) is exceeded.

The additional function requirements (see page 5) are met by circulation pump ⑧.

For optional system extensions, see pages 73 and 74.

System design 1 (cont.)

Settings

Main menu
└> Operator code
 └> Set to 200

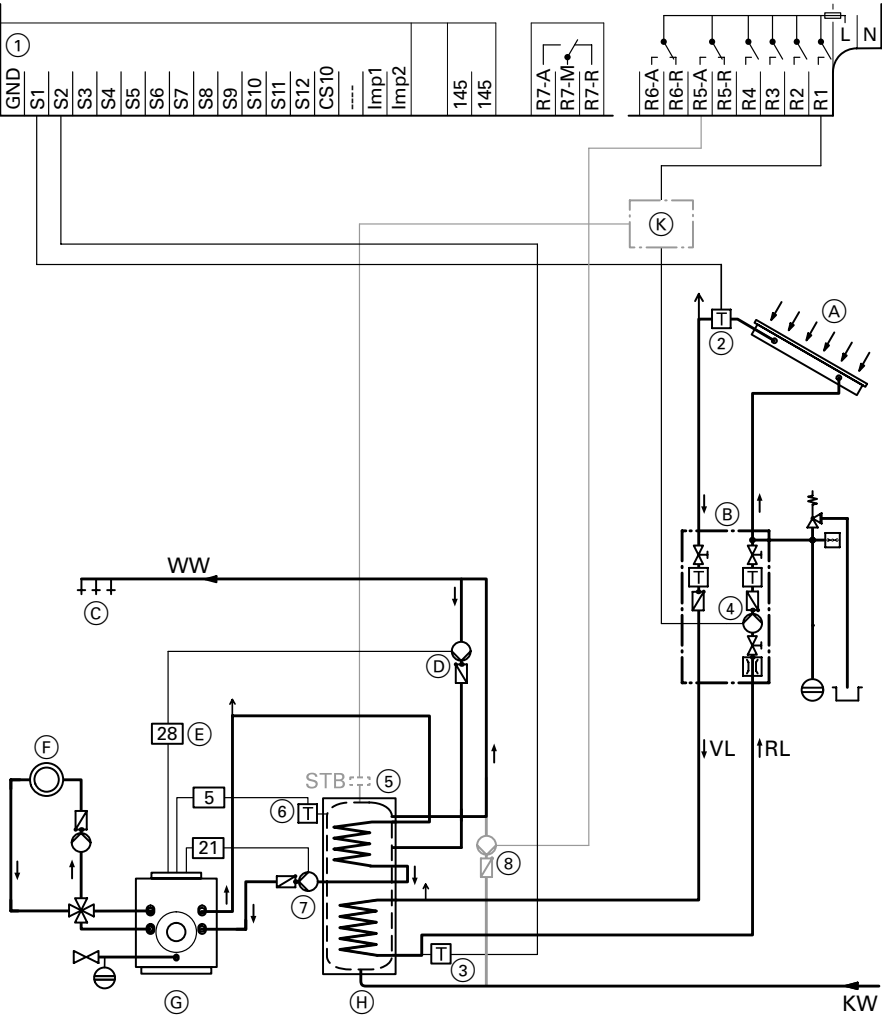
Main menu
└> Solar
 └> Options
 └> System
 └> Set to 1 (as delivered condition)

Main menu
└> Solar
 └> Setting values

Setting values	As del. condition	Modified to
T_{cylmax} Maximum cylinder temperature	60 °C	
ΔT_{on} Start-up temp. differential, circulation pump ④	5.0 K	
ΔT_{off} Shutdown temp. differential, circulation pump ④	3.0 K	
$T_{colemoff}$	130 °C*1	

*1Set this value to 200 °C if you do not want collector emergency OFF set up.

System design 1 (cont.)



- (A) Solar panel
- (B) Solar-Divicon
- (C) Draw-off points
- (D) DHW circulation
- (E) DHW circulation output of boiler control unit or on-site time switch
- (F) Heating circuit
- (G) Oil/gas fired boiler
- (H) DHW cylinder
- (K) Junction box (on-site)

System design 1 (cont.)

Item	Description	Part no.
	Control of DHW cylinder heating by solar energy	
①	Vitosolic 200	7170 926
②	Collector temperature sensor	Standard delivery
③	Cylinder temperature sensor ^{*1}	Standard delivery
④	Solar circuit pump (part of Solar-Divicon)	7170 931 or 7170 932
⑤	High limit safety cut-out ^{*2} (see page 53)	Z001 889
⑧	Circulation pump (relayering)	Vitaset price list
	DHW cylinder heating by boiler	
⑥	Cylinder temperature sensor	Boiler control unit standard delivery ^{*3}
⑦	Cylinder loading pump ^{*4}	DHW cylinder accessories

^{*1}Use a threaded elbow (standard delivery for Vitocell-B 100, accessory for Vitocell-B 300).

^{*2}Vitocell-B 100: observe max. connectable absorber surface;

Vitocell-B 300: Use a cylinder cap (DHW cylinder accessory).

^{*3}Accessory for Vitodens, Vitopend, Eurola and Pendola.

^{*4}Standard for Vitodens, Vitopend, Eurola with DHW heating and Pendola.

System design 2

Dual-mode DHW heating with Vitocell-B 100 or Vitocell-B 300 DHW cylinders – 2 collector arrays with different orientation

DHW heating without solar energy

The upper indirect coil of the DHW cylinder is heated by a boiler. The cylinder thermostat with connected cylinder temperature sensor (6) of the boiler control unit switches cylinder loading pump (7).

DHW heating with solar energy

Solar circuit pump (4) or (10) is switched ON and the DHW cylinder is heated, if a temperature differential higher than temperature differential ΔT_{on} is measured between collector temperature sensor (2) or (9) and cylinder temperature sensor (3).

Pumps (4) or (10) are switched OFF if

- the actual temperature falls below shutdown temperature differential ΔT_{off}
- the electronic temperature limit (safety shutdown at 90 °C) set at the control unit or that set at the high limit safety cut-out (if required) is exceeded.

The additional function requirements (see page 5) are met by circulation pump (8).

For optional system extensions, see pages 73 and 74.

System design 2 (cont.)

Settings

Main menu
└> Operator code
 └> Set to 200

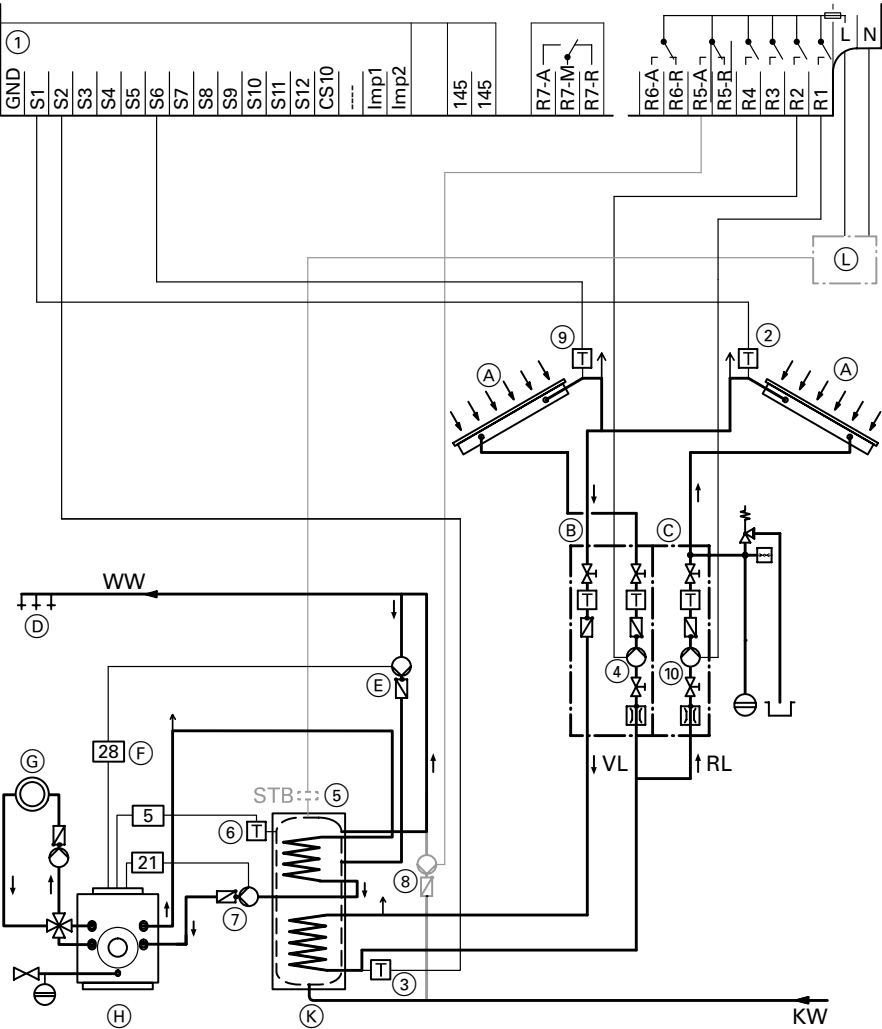
Main menu
└> Solar
 └> Options
 └> System
 └> Set to 2
 └> Hyd. type
 └> Set to 1 (as delivered condition)

Main menu
└> Solar
 └> Setting values

Setting values	As del. condition	Modified to
T_{cylmax} Maximum cylinder temperature	60 °C	
ΔT_{on} Start-up temp. differential, circulation pump ④ or ⑩	5.0 K	
ΔT_{off} Shutdown temp. differential, circulation pump ④ or ⑩	3.0 K	
$T_{colemoff}$	130 °C*1	

*1Set this value to 200 °C, if you do not want collector emergency OFF set up.

System design 2 (cont.)



- (A) Solar panel
- (B) Solar-Divicon
- (C) Solar pump line
- (D) Draw-off points
- (E) DHW circulation
- (F) DHW circulation output of boiler control unit or on-site timer
- (G) Heating circuit
- (H) Oil/gas fired boiler
- (K) DHW cylinder
- (L) Junction box (on-site)

System design 2 (cont.)

Item	Description	Part no.
	DHW cylinder heating by solar energy	
①	Vitosolic 200	7170 926
②	Collector temperature sensor	Standard delivery
③	Cylinder temperature sensor* ¹	Standard delivery
④	Solar circuit pump (part of Solar-Divicon)	7170 931 or 7170 932
⑤	High limit safety cut-out* ² (see page 53)	Z001 889
⑧	Circulation pump (relayering)	Vitaset price list
⑨	Collector temperature sensor	7814 617
⑩	Solar circuit pump (contained in solar pump line)	7170 933 or 7170 934
	DHW cylinder heating by boiler	
⑥	Cylinder temperature sensor	Boiler control unit standard delivery* ³
⑦	Cylinder loading pump* ⁴	DHW cylinder accessories

*¹Use a threaded elbow (standard delivery for Vitocell-B 100, accessory for Vitocell-B 300).

*²Vitocell-B 100: observe the max. connectable absorber surface;
Vitocell-B 300: Use a cylinder cap (DHW cylinder accessory).

*³Accessory for Vitodens, Vitopend, Eurola and Pendola.

*⁴Standard for Vitodens, Vitopend, Eurola with DHW heating and Pendola.

System design 3

Dual mode DHW heating and central heating backup via a calorifier

DHW heating without solar energy

The upper indirect coil of the DHW cylinder is heated by a boiler. The cylinder thermostat with connected cylinder temperature sensor (6) of the boiler control unit switches cylinder loading pump (7).

DHW heating with solar energy

Solar circuit pump (4) is switched ON and the DHW cylinder is heated, if a temperature differential higher than temperature differential ΔT_{on} is measured between collector temperature sensor (2) and cylinder temperature sensor (3).

Pump (4) is switched OFF if

- the actual temperature falls below shutdown temperature differential ΔT_{off}
- the electronic temperature limit (safety shutdown at 90 °C) set at the control unit or that set at the high limit safety cut-out (if required) is exceeded.

The additional function requirements (see page 5) are met by circulation pump (8).

Central heating without solar energy

Diverter valve (12) remains at zero volts (setting "AB-B") if the differential temperature between calorifier temperature sensor (10) and central heating return temperature sensor (9) falls below shutdown temperature differential ΔT_{6off} . No flow through the heating water calorifier takes place.

The boiler provides heat to the heating circuit according to the heating curve set at the boiler control unit.

Central heating with solar energy

Circulation pump (13) for heating heat exchanger (15) is switched ON if the DHW cylinder cannot be heated and a temperature differential higher than start-up temperature differential ΔT_{2on} is measured between collector temperature sensor (2) and calorifier temperature sensor (11). If the actual temperature falls below shutdown temperature ΔT_{2off} or when maximum temperature T_{cyl2max} has been reached, it is switched OFF. Calorifier loading pump (14) is switched ON and the calorifier is heated, if a temperature differential higher than start-up temperature differential ΔT_{5on} is measured between temperature sensor (16) (heat exchanger) and calorifier temperature sensor (11).

System design 3 (cont.)

The pump will be switched OFF if the actual temperature falls below shutdown temperature differential $\Delta T_{5\text{off}}$.

The temperature in the calorifier is limited by the electronic temperature limiter (safety shutdown at 90 °C) or by the high limit safety cut-out (if required). It will switch calorifier loading pump ⑬ OFF if the set temperature is exceeded.

Circulation pump ⑬ is switched OFF for approx. 2 minutes, roughly every 15 minutes (values t_{stop} and t_{circ} adjustable, see page 16), to check whether the temperature at the collector temperature sensor is high enough to change over to DHW cylinder heating. If, during this time, ΔT_{on} is exceeded, the DHW cylinder continues to be heated.

Diverter valve ⑫ is set to "AB-A" if the differential temperature between calorifier temperature sensor ⑩ and heating return temperature sensor ⑨ exceeds start-up temperature differential $\Delta T_{6\text{on}}$; the heating return water will be routed to the boiler via the calorifier. If the temperature of the preheated return water is insufficient, the boiler reheats the water to the necessary flow temperature level.

If the actual temperature falls below shutdown temperature differential $\Delta T_{6\text{off}}$, the diverter valve will be set to "AB-B".

For optional system extensions, see pages 73 and 74.

Settings

Main menu

└─> Operator code
└─> Set to 200

Main menu

└─> Solar
└─> Options
└─> System
└─> Set to 3
└─> Hyd. type
└─> Set to 2

System design 3 (cont.)

Main menu

└─ Solar

└─ Setting values

Setting values	As del. condition	Modified to
T_{cylmax} Maximum cylinder temperature	60 °C	
$T_{cyl2max}$ Maximum calorifier temperature	60 °C	
ΔT_{on} Start-up temp. differential, circulation pump ④	5.0 K	
ΔT_{off} Shutdown temp. differential, circulation pump ④	3.0 K	
ΔT_{2on} Start-up temp. differential, circulation pump ⑬	5.0 K	
ΔT_{2off} Shutdown temp. differential, circulation pump ⑬	3.0 K	
Priority _{Cyl1} (see page 76)	1	
Priority _{Cyl2} (see page 76)	2	
$T_{colemoff}$	130 °C ^{*1}	

^{*1}Set this value to 200 °C, if you do not want collector emergency OFF set up.

Main menu

└─ Solar

└─ Contractor

Contractor	As del. condition	Modified to
t stop Length of pump run interruption	2 min.	
t circ Interruption interval	15 min.	
ΔT_{Col} The collector temperature must rise by ΔT_{Col} during the t stop time, in order to change over to heating the consumer with priority 1.	2 K	

System design 3 (cont.)

Main menu

└─ System

└─ Options

Options	As del. condition	Change to
Thermost. 2 Thermostat function for maximum temperature shutdown of calorifier loading pump ⑭	No	Yes
ΔT_{Fct5} ΔT function for controlling calorifier loading pump ⑭	No	Yes
ΔT_{Fct6} ΔT function for controlling three-way diverter valve ⑫	No	Yes

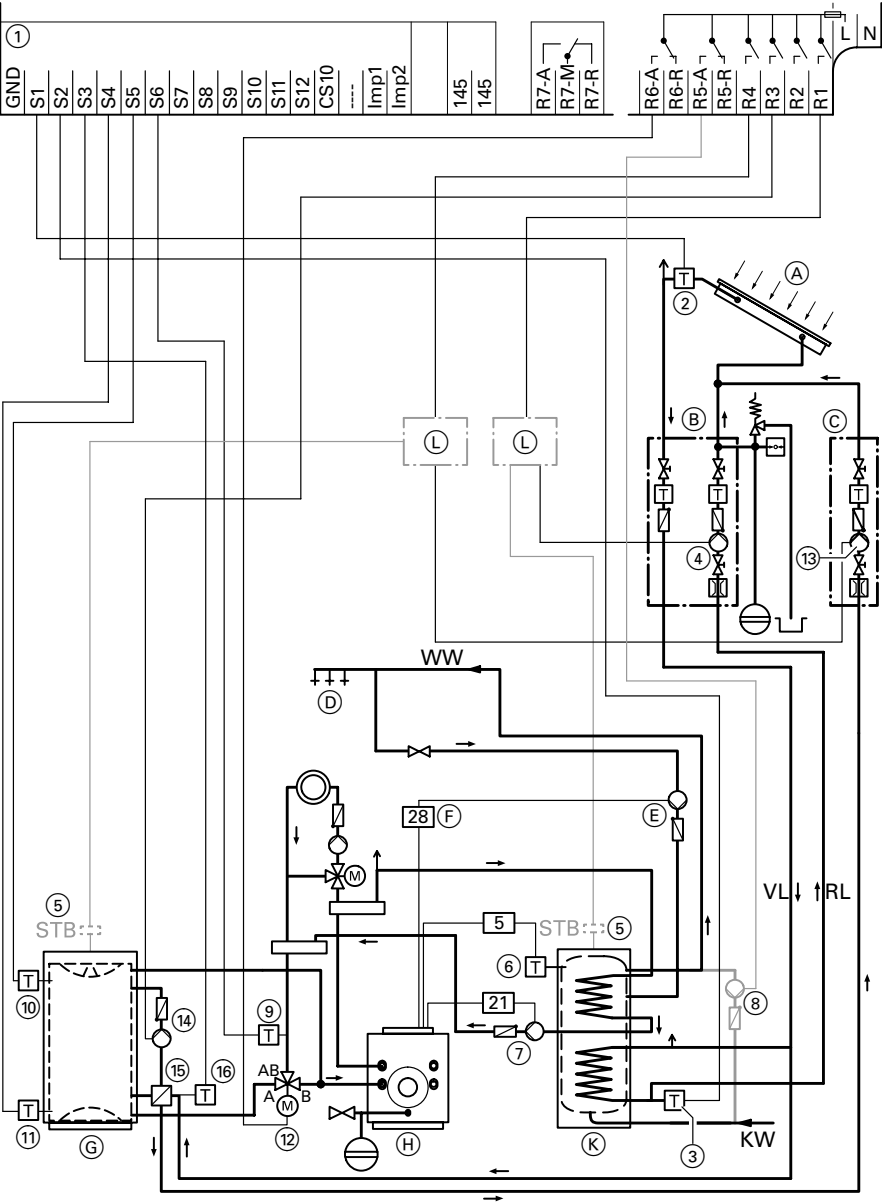
Main menu

└─ System

└─ Setting values

Setting values	As del. condition	Change to
Th_{2on} set the same value as for $T_{cyl2max}$ (maximum calorifier temperature), less 2 K	40 °C	
Th_{2off} set the same value as for $T_{cyl2max}$	45 °C	
ΔT_{5on} Start-up temp. differential, circulation pump ⑭	5.0 K	
ΔT_{5off} Shutdown temp. differential, circulation pump ⑭	3.0 K	
ΔT_{6on} Start-up temperature differential for controlling three-way diverter valve ⑫	5.0 K	
ΔT_{6off} Shutdown temperature differential for controlling three-way diverter valve ⑫	3.0 K	

System design 3 (cont.)



System design 3 (cont.)

- Ⓐ Solar panel
- Ⓑ Solar-Divicon
- Ⓒ Solar pump line
- Ⓓ Draw-off points
- Ⓔ DHW circulation
- Ⓕ DHW circulation output of boiler control unit or on-site timer
- Ⓖ Heating water calorifier
- Ⓗ Oil/gas fired boiler
- Ⓚ DHW cylinder
- Ⓛ Junction box (on-site)

System design 3 (cont.)

Item	Description	Part no.
	DHW cylinder heating by solar energy	
①	Vitosolic 200	7170 926
②	Collector temperature sensor	Standard delivery
③	Cylinder temperature sensor* ¹	Standard delivery
④	Solar circuit pump (part of Solar-Divicon)	7170 931 or 7170 932
⑤	High limit safety cut-out* ² (see page 53)	Z001 889
⑧	Circulation pump (relayering)	Vitaset price list
	DHW cylinder heating by boiler	
⑥	Cylinder temperature sensor	Boiler control unit standard delivery
⑦	Cylinder loading pump	DHW cylinder accessories
	Central heating with solar energy	
⑨	Return temperature sensor (heating circuit)	7170 965
⑩	Temperature sensor (calorifier), discharge	7170 965
⑪	Temperature sensor (calorifier), reloading	Standard delivery
⑫	Three-way diverter valve	7814 924
⑬	Solar circuit pump for calorifier heating (contained in solar pump line)	7170 933 or 7170 934
⑭	Circulation pump for calorifier heating	on-site
⑮	Heat exchanger	on request
⑯	Temperature sensor (heat exchanger)	7170 965

*¹Use a threaded elbow (standard delivery for Vitocell-B 100, accessory for Vitocell-B 300).

*²Vitocell-B 100: observe the max. connectable absorber surface;
Vitocell-B 300: Use a cylinder cap (DHW cylinder accessory).

System design 4

Dual mode DHW heating with two DHW cylinders

(particularly suitable for retrofitting in existing systems)

DHW heating without solar energy

DHW cylinder 2 is heated by the boiler. The cylinder thermostat with connected cylinder temperature sensor ⑥ of the boiler control unit switches cylinder loading pump ⑦. DHW circulation pump ⑧b (if installed) is switched ON and circulation pump ⑧a is switched OFF to ensure that DHW circulation takes place only via DHW cylinder 2.

Circulation pump ⑧a is started if the temperature differential between sensors ⑨ and ⑩ is higher than start-up temperature differential ΔT_{on} or DHW heating with the additional function has been enabled (see page 5). The pump will be switched OFF if the actual temperature falls below shutdown temperature differential ΔT_{off} or if the additional function is terminated.

DHW heating with solar energy

Solar circuit pump ④ is switched ON and DHW cylinder 1 is heated, if a temperature differential higher than start-up temperature differential ΔT_{on} is measured between collector temperature sensor ② and cylinder temperature sensor ③. Pump ④ is switched off if

- the actual temperature falls below shutdown temperature differential ΔT_{off}
- the electronic temperature limit (safety shutdown at 90 °C) set at the control unit or that set at the high limit safety cut-out (if required) is exceeded.

The DHW circulation covers both DHW cylinders. This feeds the water heated in DHW cylinder 1 into DHW cylinder 2. This way, DHW cylinder 2 is also heated by solar energy. DHW circulation pump ⑧b (if installed) for DHW cylinder 2 is controlled by the boiler control unit.

For optional system extensions, see page 73 and 74.

System design 4 (cont.)

Settings

Main menu
└> Operator code
 └> Set to 200

Main menu
└> Solar
 └> Options
 └> System
 └> Set to 1 (as delivered condition)

Main menu
└> Solar
 └> Setting values

Setting values	As del. condition	Modified to
T_{cylmax} Maximum cylinder temperature	60 °C	
ΔT_{on} Start-up temp. differential, circulation pump ④	5.0 K	
ΔT_{off} Shutdown temp. differential, circulation pump ④	3.0 K	
$T_{colemoff}$	130 °C*1	

*1Set this value to 200 °C, if you do not want collector emergency OFF set up.

Main menu
└> System
 └> Options

Options	As del. condition	Change to
ΔT_{Fct6} ΔT function for controlling circulation pump ⑧a	No	Yes
Add. fct. Additional function for DHW heating	No	Yes

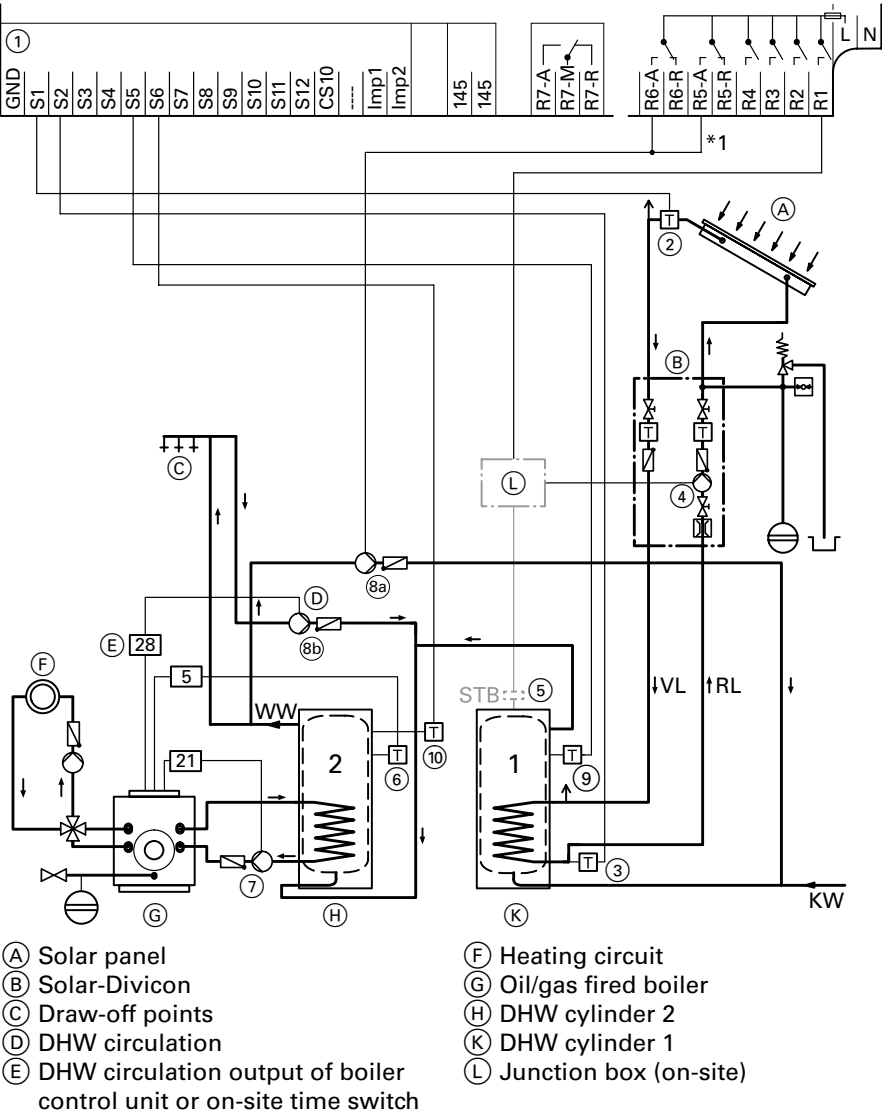
System design 4 (cont.)

Main menu
└─> System
 └─> Setting values

Setting values	As del. condition	Modified to
ΔT_{on} Start-up temperature differential for circulation pump (8a)	5.0 K	
ΔT_{off} Shutdown temperature differential for circulation pump (8a)	3.0 K	

System design 4 (cont.)

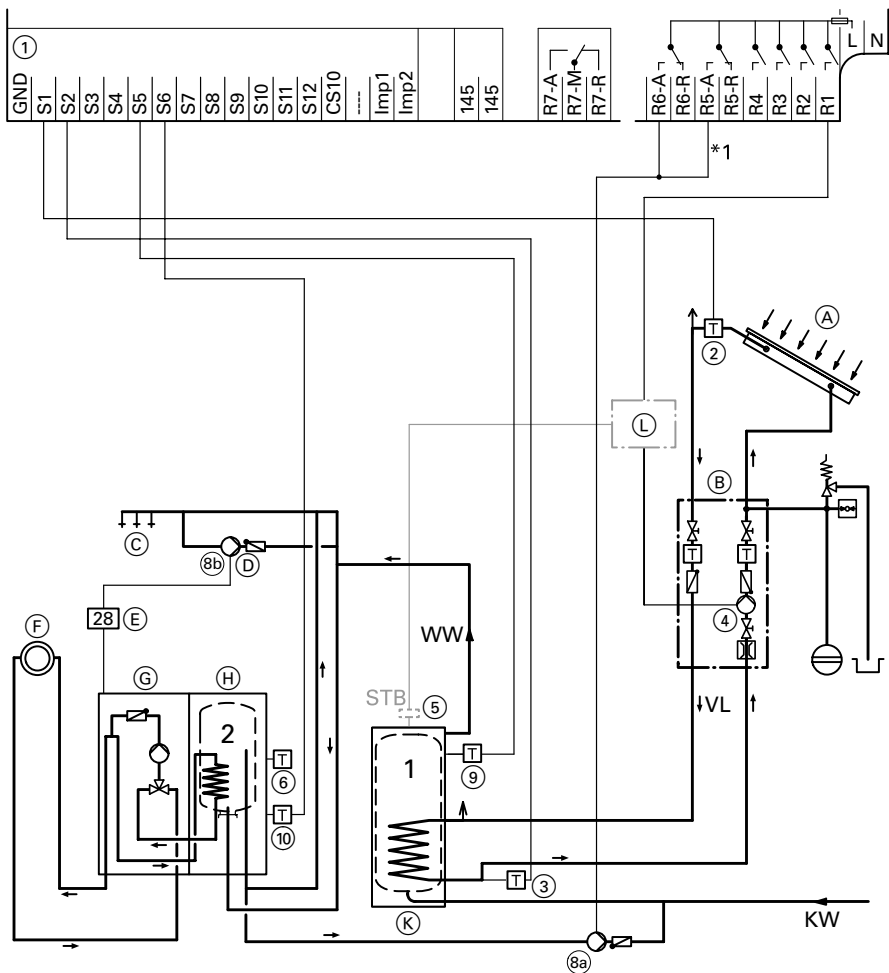
Installation diagram 4a
(System with two DHW cylinders with indirect coils)



*1Insert jumper; pump ⑧a for the additional function **and** circulation (relayering).

System design 4 (cont.)

Installation diagram 4b (System with Vitocell 300 with indirect coil/s)



- (A) Solar panel
- (B) Solar-Divicon
- (C) Draw-off points
- (D) DHW circulation
- (E) DHW circulation output of control unit or on-site time switch
- (F) Heating circuit
- (G) Wall mounted gas fired boiler with wall mounted DHW cylinder
- (H) DHW cylinder 2
- (K) DHW cylinder 1
- (L) Junction box

*1 Insert jumper; pump (8a) for the additional function **and** circulation (relayering).

System design 4 (cont.)

Item	Description	Part no.
	Heating DHW cylinder 1 through solar energy	
①	Vitosolic 200	7170 926
②	Collector temperature sensor	Standard delivery
③	Cylinder temperature sensor* ¹	Standard delivery
④	Solar circuit pump (part of Solar-Divicon)	7170 931 or 7170 932
⑤	High limit safety cut-out* ² (see page 53)	Z001 889
	Heating DHW cylinder 2 by boiler	
⑥	Cylinder temperature sensor	Boiler control unit standard delivery* ³
⑦	Cylinder loading pump* ⁴	DHW cylinder accessories
	DHW circulation changeover	
⑧	DHW circulation pump or (calorifier) circulation pump (relayering)	Vitaset price list
⑨	Temperature sensor cylinder 1	Standard delivery
⑩	Temperature sensor cylinder 2	7170 965

*¹Use a threaded elbow (standard delivery for Vitocell-B 100, accessory for Vitocell-B 300).

*²Vitocell-B 100: observe the max. connectable absorber surface;

Vitocell-B 300: Use a cylinder cap (DHW cylinder accessory).

*³Accessory for Vitodens, Vitopend, Eurola and Pendola.

*⁴Standard for Vitodens, Vitopend, Eurola with DHW heating and Pendola.

System design 5

Dual mode DHW and swimming pool heating

DHW heating without solar energy

The top part of the DHW cylinder is heated by the boiler.

The cylinder thermostat with connected cylinder temperature sensor ⑥ of the boiler control unit switches cylinder loading pump ⑦.

DHW heating with solar energy

Solar circuit pump ④ is switched ON and the DHW cylinder is heated, if a temperature differential higher than start-up temperature differential ΔT_{on} is measured between collector temperature sensor ② and cylinder temperature sensor ③.

Pump ④ is switched OFF if

- the actual temperature falls below shutdown temperature differential ΔT_{off} or when maximum temperature T_{cylmax} has been reached
- the electronic temperature limit (safety shutdown at 90 °C) set at the control unit or that set at the high limit safety cut-out (if required) is exceeded.

The additional function requirements (see page 5) are met by circulation pump ⑧.

Swimming pool heating

When the maximum cylinder temperature T_{cylmax} has been achieved or if the DHW cylinder cannot be heated any further, the system checks whether heat exchanger 1 can be heated up.

Circulation pump ⑩ is switched ON if a temperature differential higher than start-up temperature differential ΔT_{on} is measured between collector temperature sensor ② and temperature sensor ⑨. The pump is switched OFF if the actual temperature falls below shutdown temperature differential ΔT_{off} or when maximum temperature $T_{cyl2max}$ has been reached.

Circulation pump ⑩ is switched OFF for approx. 7 minutes, roughly every 30 minutes (values t_{stop} and t_{circ} adjustable, see page 30), to check whether the temperature at the collector temperature sensor is high enough to change over to DHW cylinder heating.

Circulation pump ⑪ for swimming pool heating is switched ON if a temperature differential higher than start-up temperature differential ΔT_{on} is measured between collector temperature sensor ⑨ and temperature sensor ⑫. Pump ⑪ is switched OFF if the actual temperature falls below shutdown temperature differential ΔT_{off} or when set temperature Th_{2off} has been reached.

System design 5 (cont.)

When the solar energy is insufficient to heat the swimming pool, the heating of the swimming pool will be taken over by the oil/gas fired boiler via temperature sensor ⑭ in heat exchanger 2.

Circulation pump ⑯ and filter pump ⑰ are switched ON if the actual temperature falls below $Th_{3_{on}}$, and OFF when $Th_{3_{off}}$ has been reached.

The filter time and any boiler backup should fall outside those times when heating by solar energy can be expected. Set the start and stop times via time switch 2.

For optional system extensions, see pages 73 and 74.

System design 5 (cont.)

Settings

Main menu
└> Operator code
 └> Set to 200

Main menu
└> Solar
 └> Options
 └> System
 └> Set to 3
 └> Hyd. type
 └> Set to 2

Main menu
└> Solar
 └> Setting values

Setting values	As del. condition	Modified to
T_{cylmax} Maximum cylinder temperature	60 °C	
$T_{cyl2max}$ Maximum swimming pool temperature	60 °C	28 °C
ΔT_{on} Start-up temp. differential, circulation pump ④	5.0 K	
ΔT_{off} Shutdown temp. differential, circulation pump ④	3.0 K	
ΔT_{2on} Start-up temp. differential, circulation pump ⑩	5.0 K	
ΔT_{2off} Shutdown temp. differential, circulation pump ⑩	3.0 K	
Priority _{Cyl1} (see page 76)	1	
Priority _{Cyl2} (swimming pool) (see page 76)	2	
$T_{colemoff}$	130 °C*1	

*1Set this value to 200 °C, if you do not want collector emergency OFF set up.

System design 5 (cont.)

Main menu
└─> Solar
 └─> Contractor

Contractor	As del. condition	Change to
t stop Length of pump run interruption	2 min.	7 min.
t circ Interruption interval	15 min.	30 min.
ΔT_{Col} The collector temperature must rise by ΔT_{Col} during the t stop time, in order to change over to heating the consumer with priority 1	2 K	

Main menu
└─> System
 └─> Options

Options	As del. condition	Change to
Thermost. 2 Thermostat function for maximum temperature shutdown of swimming pool circulation pump (11)	No	Yes
ΔT_{Fct5} ΔT function for controlling swimming pool circulation pump (11)	No	Yes
Thermost. 3 Thermostat function for reheating of swimming pool by boiler using pump (16)	No	Yes
Time switch 2*1	No	Yes

*1System time/setting values/setting time switch 2 (see page 88).

System design 5 (cont.)

Main menu

└─ System

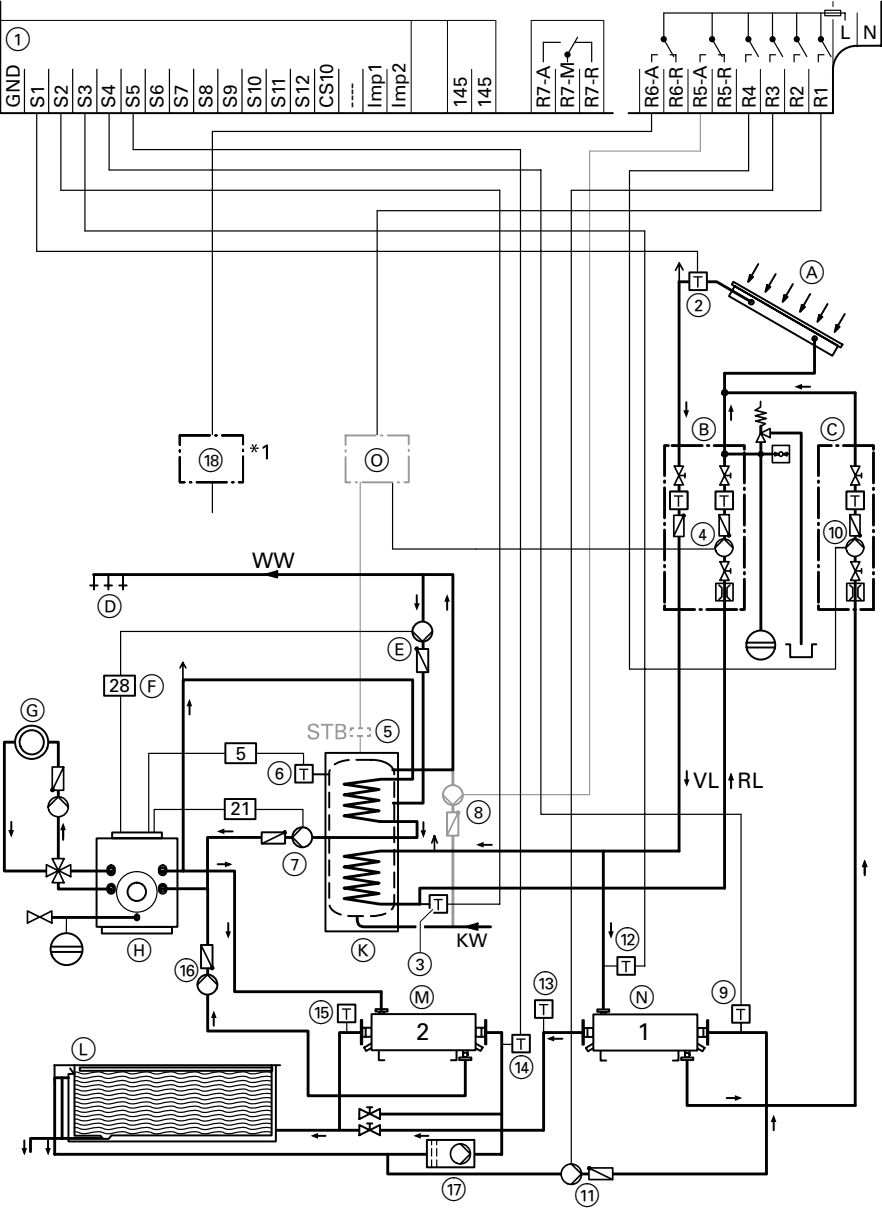
└─ Setting values

Setting values	As del. condition	Modified to
Th _{2on} set same value as for T _{cyl2max} (maximum swimming pool temperature), less 0.5 K	40 °C	27.5 °C
Th _{2off} set same value as for T _{cyl2max}	45 °C	28 °C* ¹
ΔT _{5on} Start-up temperature differential for swimming pool circulation pump (11)	5.0 K	
ΔT _{5off} Shutdown temperature differential for swimming pool circulation pump (11)	3.0 K	
Th _{3on} Start-up temperature for circulation pump (16) for swimming pool reheating and filter pump (17)	40 °C	26.5 °C
Th _{3off} Shutdown temperature for circulation pump (16) for swimming pool reheating and filter pump (17)	45 °C	27 °C* ²

*¹If necessary, set a value 1 to 2 °C higher. Note that this may raise the relative humidity in indoor swimming pools.

*²When changing this value, also modify Th_{3on} by the same value.

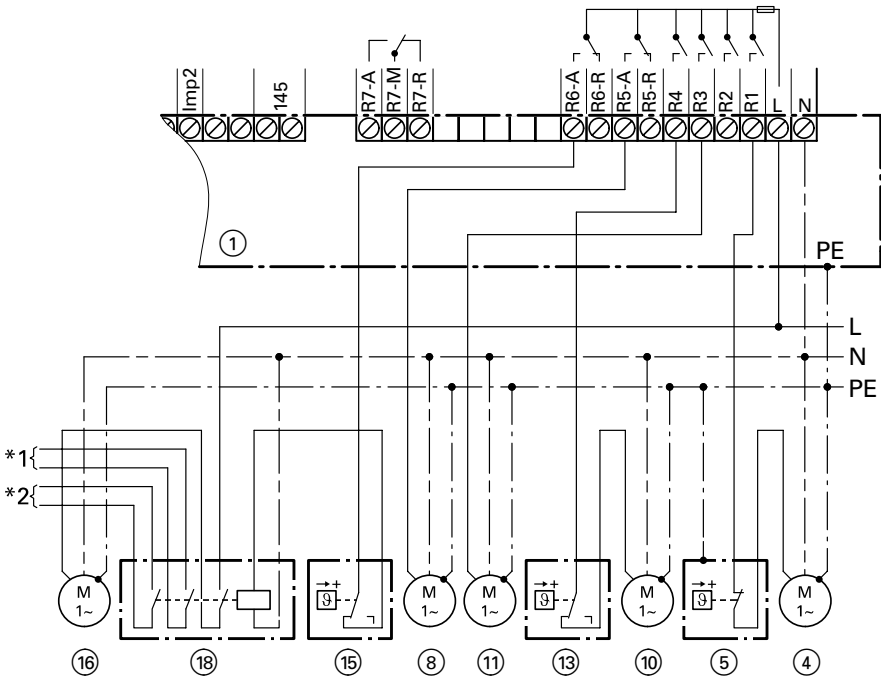
System design 5 (cont.)



*1Wiring diagram, see page 33.

System design 5 (cont.)

- | | |
|--|----------------------------|
| (A) Solar panel | (G) Heating circuit |
| (B) Solar-Divicon | (H) Oil/gas fired boiler |
| (C) Solar pump line | (K) Dual mode DHW cylinder |
| (D) Draw-off points | (L) Swimming pool |
| (E) DHW circulation | (M) Heat exchanger 2 |
| (F) DHW circulation output of boiler control unit or on-site timer | (N) Heat exchanger 1 |
| | (O) Junction box (on-site) |



*1 Start-up signal for filter system with pump (17).

*2 In conjunction with

- Viessmann Trimatik:
Connection to terminals "X3.3" and "X3.4" inside FT control module.
- Dekamatik:
Connection for "External burner ON" control (separate installation instructions).
- Vitotronic 200 and 300:
Connection in plug 150 to terminals "ON", "ON" or in socket "DE4" in control module V in plug 103 to terminals "1" and "2".
- Vitodens with weather-compensated control unit:
Connection in plug "X4" to terminals "X4.1" and "X4.2".

System design 5 (cont.)

Item	Description	Part no.
DHW cylinder heating by solar energy		
①	Vitosolic 200	7170 926
②	Collector temperature sensor	Standard delivery
③	Cylinder temperature sensor* ¹	Standard delivery
④	Solar circuit pump (part of Solar-Divicon)	7170 931 or 7170 932
⑤	High limit safety cut-out* ² (see pages 33 and 53)	Z001 889
⑧	Circulation pump (relayering)	Vitaset price list
DHW cylinder heating by boiler		
⑥	Cylinder temperature sensor	Boiler control unit standard delivery
⑦	Cylinder loading pump	DHW cylinder accessories

^{*1}Use a threaded elbow (standard delivery for Vitocell-B 100, accessory for Vitocell-B 300).

^{*2}Vitocell-B 100: observe the max. connectable absorber surface;
Vitocell-B 300: Use a cylinder cap (DHW cylinder accessory).

System design 5 (cont.)

Item	Description	Part no.
	Swimming pool heating by solar energy	
⑨	Temperature sensor (swimming pool)	Standard delivery
⑩	Solar circuit pump for swimming pool heating (contained in solar pump line)	7170 933 or 7170 934
⑪	Circulation pump for swimming pool heating	Vitaset price list
⑫	Temperature sensor (heat exchanger 1)	7170 965
⑬	Temperature limiter (max. limit)	Z001 887
	Swimming pool heating by boiler	
⑭	Temperature sensor (heat exchanger 2)	7170 965
⑮	Temperature limiter (max. limit)	Z001 887
⑯	Circulation pump for swimming pool heating (reheating)	on-site
⑰	Pump, filter system	on-site
⑱	Contactory relay	7814 681

System design 6

Dual mode DHW heating and central heating backup with combination cylinder

DHW heating without solar energy
 The top part of the combination cylinder is heated by the boiler. The integrated instantaneous water heater/standby reservoir is heated by the surrounding hot water of the calorifier.
 The cylinder thermostat with connected cylinder temperature sensor ⑥ of the boiler control unit switches cylinder loading pump ⑦.

DHW heating with solar energy
 Solar circuit pump ④ is switched ON and the DHW cylinder is heated, if a temperature differential higher than start-up temperature differential ΔT_{on} is measured between collector temperature sensor ② and cylinder temperature sensor ③.

System design 6 (cont.)

Pump ④ is switched off if

- the actual temperature falls below shutdown temp. differential ΔT_{off}
- the electronic temperature limit (safety shutdown at 90 °C) set at the control unit or that set at the high limit safety cut-out (if required) is exceeded.

The additional function requirements (see page 5) are met by circulation pump ⑧.

The entire combination cylinder will be heated by the solar heating system if the solar radiation is sufficient for heating the domestic hot water.

The top part of the combination cylinder will only be reheated by the boiler if the temperature of the water falls below the temperature set at the boiler control unit.

If the solar irradiation is insufficient, the DHW in the bottom part of the combination cylinder will be preheated by solar energy whilst the top part is raised to the required temperature by the boiler.

Central heating with solar energy

Three-way diverter valve ⑩ is set to "AB-A" if the temperature differential between temperature sensor ⑧ and heating return temperature sensor ⑨ exceeds start-up temperature differential $\Delta T_{6_{\text{on}}}$; the heating return water will be routed to the boiler via the combination cylinder. If the temperature of the preheated return water is insufficient, the boiler reheats the water to the necessary flow temperature level. The diverter valve will be set to "AB-B" if the actual temperature falls below shutdown temperature differential $\Delta T_{6_{\text{off}}}$.

For optional system extensions, see pages 73 and 74.

Settings

Main menu

└─> Operator code
 └─> Set to 200

Main menu

└─> Solar
 └─> Options
 └─> System
 └─> Set to 1 (as delivered condition)

System design 6 (cont.)

Main menu
└─> Solar
 └─> Setting values

Setting values	As del. condition	Modified to
T_{cylmax} Maximum cylinder temperature	60 °C	
ΔT_{on} Start-up temp. differential, circulation pump ④	5.0 K	
ΔT_{off} Shutdown temp. differential, circulation pump ④	3.0 K	
$T_{colemoff}$	130 °C*1	

*1Set this value to 200 °C, if you do not want collector emergency OFF set up.

Main menu
└─> System
 └─> Options

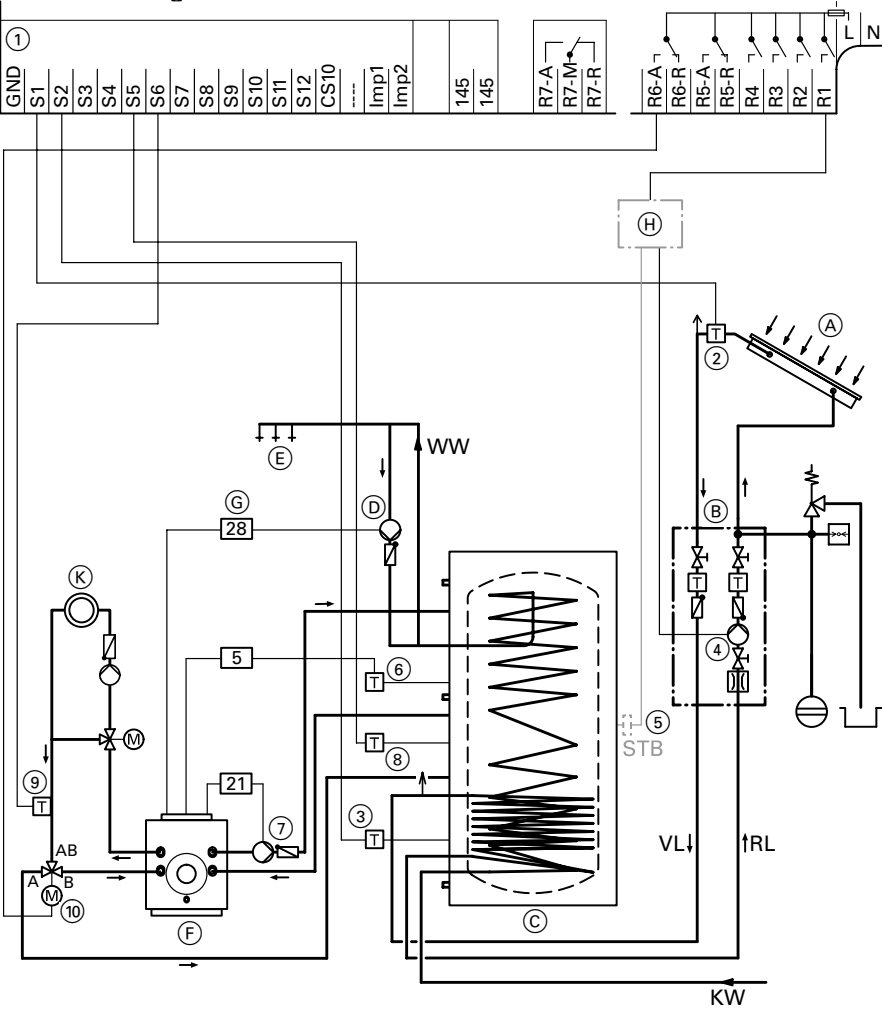
Options	As del. condition	Change to
ΔT_{Fct6} ΔT function for controlling three-way diverter valve ⑩	No	Yes

Main menu
└─> System
 └─> Setting values

Setting values	As del. condition	Modified to
ΔT_{6on} Start-up temperature differential for controlling three-way diverter valve ⑩	5.0 K	
ΔT_{6off} Shutdown temperature differential for controlling three-way diverter valve ⑩	3.0 K	

System design 6 (cont.)

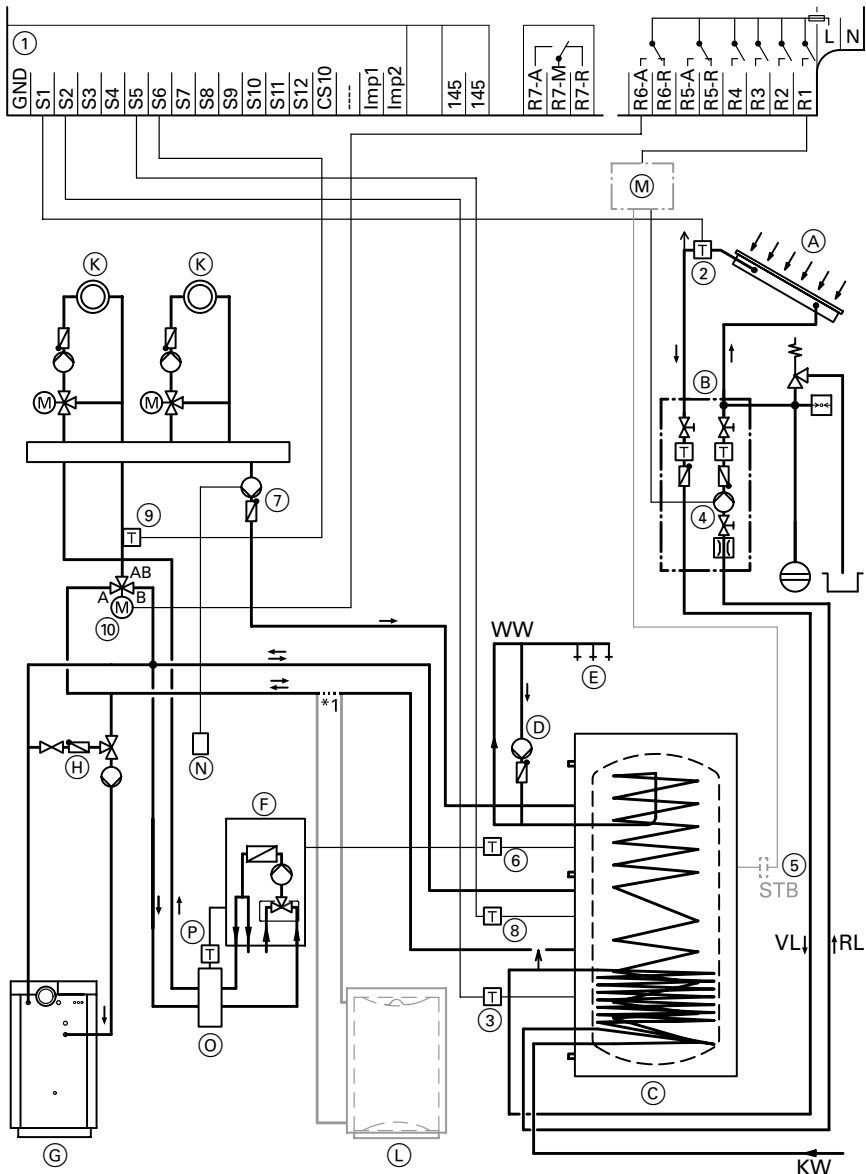
Installation diagram 6a



- (A) Solar panel
- (B) Solar-Divicon
- (C) Combination cylinder Vitocell 333
- (D) DHW circulation
- (E) Draw-off points
- (F) Oil/gas fired boiler
- (G) DHW circulation output of boiler control unit or on-site time switch
- (H) Junction box (on site)
- (K) Heating circuit

System design 6 (cont.)

Installation diagram 6b (Vitodens 100 or 200 to 32 kW)

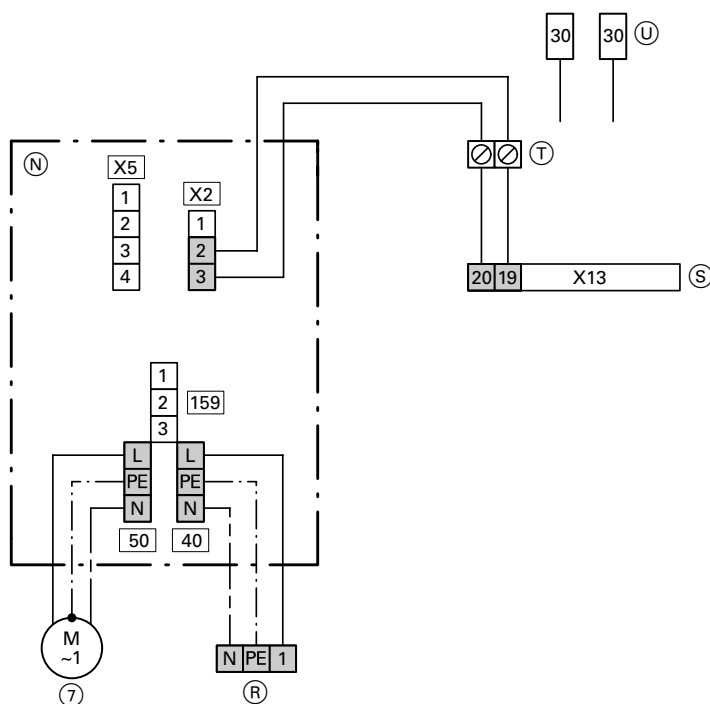


**1 This connection is not present when a heating water calorifier is installed.*

System design 6 (cont.)

- (A) Solar panel
- (B) Solar-Divicon
- (C) Combination cylinder Vitocell 333
- (D) DHW circulation
- (E) Draw-off points
- (F) Vitodens 100 or 200 up to 32 kW
- (G) Solid fuel boiler
- (H) Return temperature raising
- (K) Heating circuit
- (L) Vitocell 050 heating water calorifier
- (M) Junction box (on site)
- (N) Adaptor connection extension
- (O) Low loss header, part no. 7149 100
- (P) Temperature sensor for low loss header, part no. 7819 601

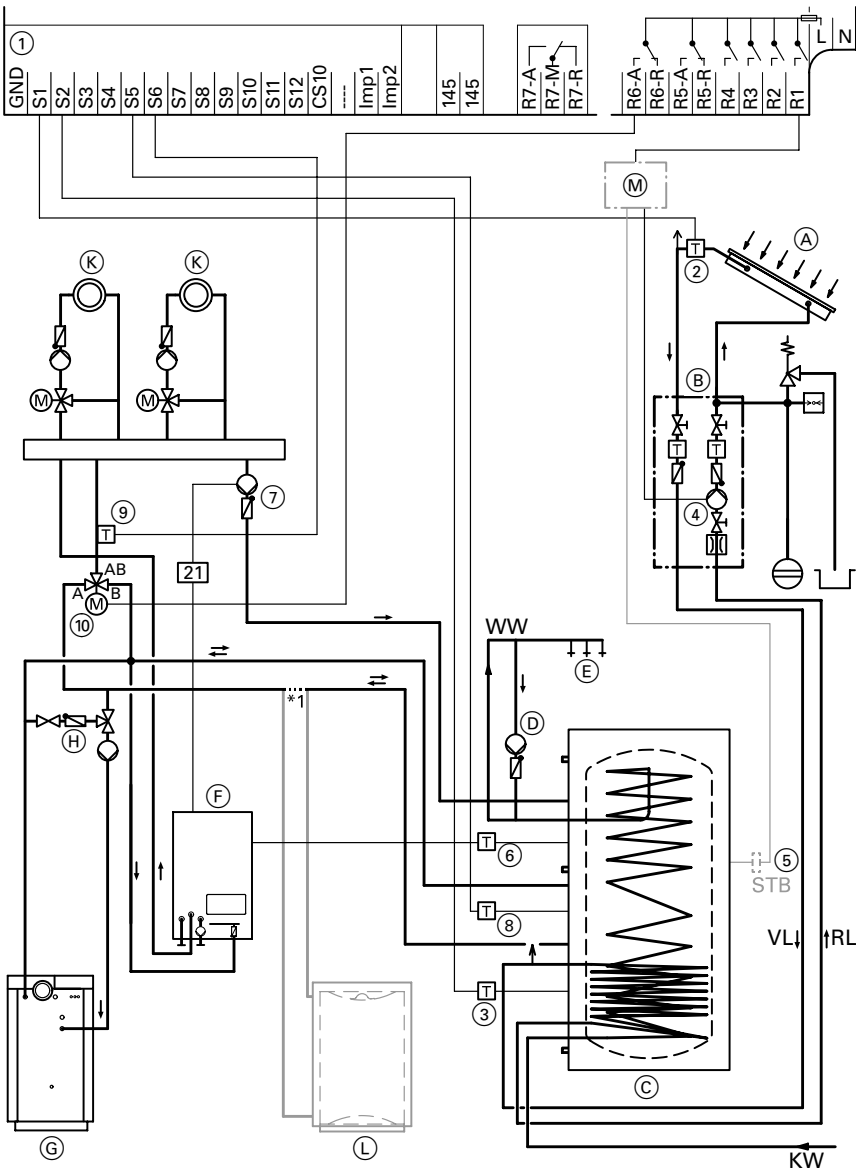
Connection of cylinder loading pump ⑦



- (N) Adaptor connection extension, part no. 7404 582
- (R) Connection to plug-in connector 156 in control unit of wall mounted boiler
- (S) Connector strip of control unit for wall mounted boilers
- (T) On-site terminals
- (U) Disconnect internal three-way diverter valve

System design 6 (cont.)

Installation diagram 6c (Vitodens 300)



***1 This connection is not present when a heating water calorifier is installed.*

System design 6 (cont.)

- Ⓐ Solar panel
- Ⓑ Solar-Divicon
- Ⓒ Combination cylinder Vitocell 333
- Ⓓ DHW circulation
- Ⓔ Draw-off points
- Ⓕ Vitodens 300
- Ⓖ Solid fuel boiler
- Ⓗ Return temperature raising
- Ⓚ Heating circuit
- Ⓛ Vitocell 050 heating water calorifier
- Ⓜ Junction box (on site)

System design 6 (cont.)

Item	Description	Part no.
	Combination cylinder heating by solar energy	
①	Vitosolic 200	7170 926
②	Collector temperature sensor	Standard delivery
③	Cylinder temperature sensor* ¹	Standard delivery
④	Solar circuit pump (part of Solar-Divicon)	7170 931 or 7170 932
⑤	High limit safety cut-out* ² (see page 53)	Z001 889
	Combination cylinder heating by boiler	
⑥	Cylinder temperature sensor ■ for freestanding boilers and Vitodens 300	Boiler control unit standard delivery 7819 601
	■ for Vitodens100 and 200	
⑦	Cylinder loading pump	DHW cylinder accessories
	Central heating with solar energy	
⑧	Temperature sensor (combination cylinder)	Standard delivery
⑨	Return temperature sensor (heating circuit)	7170 965
⑩	Three-way diverter valve	7814 924

*¹Use a threaded elbow (standard delivery for Vitocell-B 100, accessory for Vitocell-B 300).

*²Vitocell-B 100: observe the max. connectable absorber surface;
Vitocell-B 300: Use a cylinder cap (DHW cylinder accessory).

System design 7

Dual mode DHW heating with heating water calorifiers connected in series

(particularly suitable for solar heating systems with 20 to 100 m² absorber surface)

DHW heating without solar energy

DHW cylinder 2 is heated by the boiler. The cylinder thermostat with connected cylinder temperature sensor ⑩ switches cylinder loading pump ⑪.

DHW heating with solar energy Heating water calorifier heating

Solar circuit pump ④ is switched ON if solar cell ⑥ measures a solar irradiation level which is above the set threshold value (DHW cylinder circulation bypass, see page 75). Circulation pump ④ for heating plate heat exchanger 1 is switched ON if a temperature differential higher than start-up temperature differential ΔT_{on} is measured between temperature sensor ② and calorifier 2 temperature sensor ③. Pump ④ will be switched OFF if the actual temperature falls below shutdown temperature differential ΔT_{off} . If the temperature differential between temperature sensor ⑤ and temperature sensor ③ is higher than start-up temperature differential ΔT_{on} , motorised valve ⑨ is opened and calorifiers 1 and 2 are heated by circulation pump ⑦ (if the start-up temperature differential HE ΔT_{on} is exceeded, pump ⑦ will be started. If it falls below shutdown temperature

differential HE ΔT_{off} , it will be stopped).

The volume flow in the calorifier loading circuit is matched to that of the solar circuit via line regulating valve ⑧.

DHW heating

If the temperature differential between calorifier 1 temperature sensor ⑫ and DHW cylinder 1 temperature sensor ⑬ is higher than start-up temperature differential ΔT_{on} , circulation pumps ⑭ and ⑮ are started, motorised valve ⑳ is opened, and DHW is heated via plate heat exchanger 2.

Pumps ⑭ and ⑮ are switched OFF, and valve ⑳ is closed, if the actual temperature falls below shutdown temperature differential ΔT_{off} . The volume flow of the calorifier discharge circuit and the DHW preheating stage are matched by means of line regulating valves ⑰ and ⑱.

For high water hardness (>20 °dH), a thermostatic mixing valve ⑲ limiting the heat exchanger flow temperature to 70 °C should be installed to prevent premature scaling up of heat exchanger 2.

System design 7 (cont.)

Motorised valves ⑨ and ⑳, which are closed in their zero-volt position, prevent faulty circulation during loading and discharging of the calorifiers.

For optional system extensions, see pages 73 and 74.

The additional function requirements (see page 5) are met by circulation pump ㉑.

Settings

Main menu
└─> Operator code
 └─> Set to 200

Main menu
└─> Solar
 └─> Options
 └─> System
 └─> Set to 1 (as delivered condition)
 └─> SC bypass
 └─> Set to yes

Main menu
└─> Solar
 └─> Setting values

Setting values	As del. condition	Change to
T_{cylmax} Maximum cylinder temperature	60 °C	
ΔT_{on} Start-up temp. differential, circulation pump ④	5.0 K	
ΔT_{off} Shutdown temp. differential, circulation pump ④	3.0 K	

System design 7 (cont.)

Setting values	As del. condition	Change to
HE ΔT_{on} Start-up temp. differential, circulation pump ⑦	5.0 K	
HE ΔT_{off} Shutdown temp. differential, circulation pump ⑦	3.0 K	
SC byp. (see page 75)	200 W/m ²	
T _{colemoff}	130 °C*1	

*1Set this value to 200 °C, if you do not want collector emergency OFF set up.

Main menu

└─ System
 └─ Options

Options	As del. condition	Change to
Thermost. 1 Thermostat function of maximum cylinder temperature shutdown of motorised valve ⑨	No	Yes
ΔT Fct5 ΔT function for controlling motorised valve ⑨	No	Yes
ΔT Fct6 ΔT function for controlling circulation pumps ⑭ and ⑮ and motorised valve ⑨	No	Yes

Main menu

└─ System
 └─ Setting values

Setting values	As del. condition	Modified to
Th _{1on} Shutdown temperature for motorised valve ⑨. Set the same value as for T _{cylmax} (maximum cylinder temperature), less 2 K	40 °C	58 °C

System design 7 (cont.)

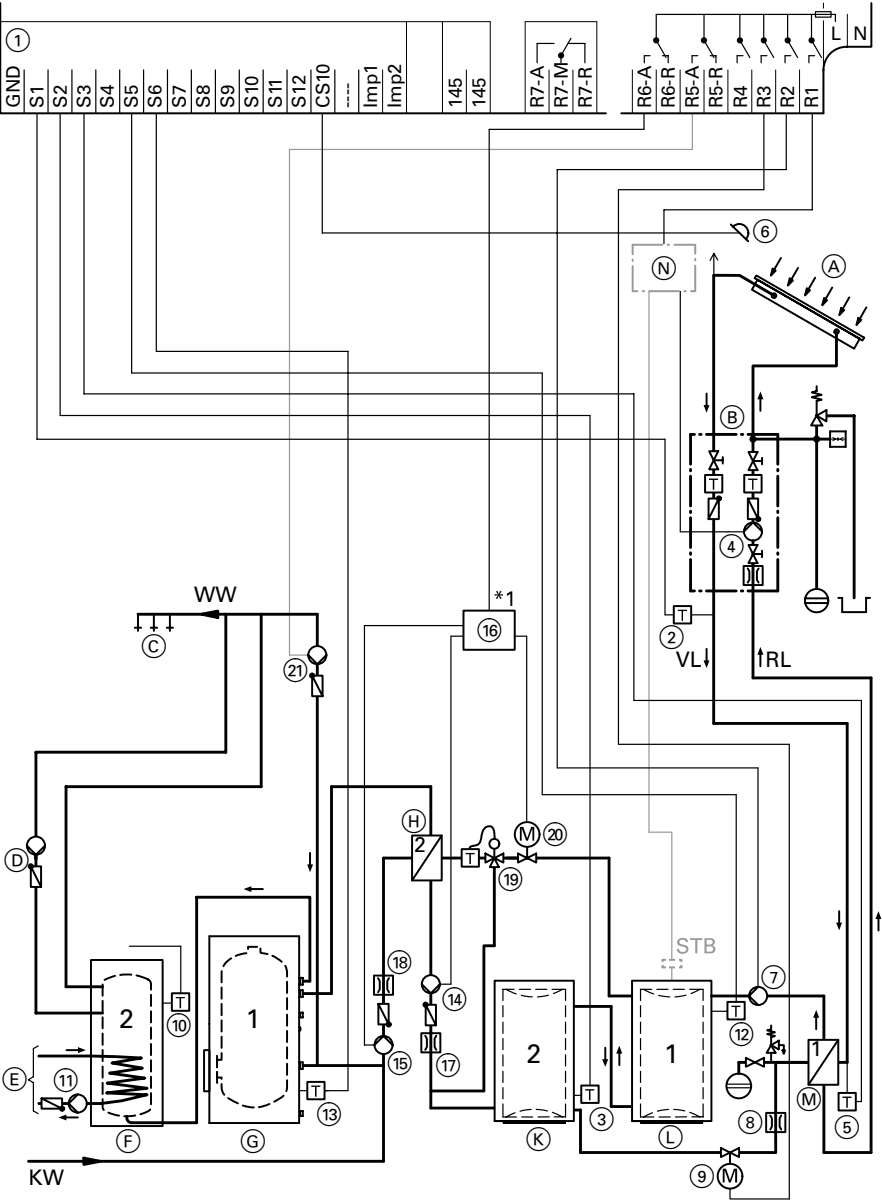
Setting values	As del. condition	Modified to
Th1 _{off} Shutdown temperature for motorised valve (9). Set the same value as for T _{cylmax}	45 °C	60 °C
ΔT5 _{on} Start-up temperature differential for controlling motorised valve (9). Set the same value as for HE ΔT _{on}	5.0 K	
ΔT5 _{off} Start-up temperature differential for controlling motorised valve (9). Set the same value as for HE ΔT _{off}	3.0 K	
ΔT6 _{on} Start-up temperature differential for controlling circulation pumps (14) and (15) and motorised valve (20)	5.0 K	
ΔT6 _{off} Shutdown temperature differential for controlling circulation pumps (14) and (15) and motorised valve (20)	3.0 K	

Main menu

└─ System
 └─ Contractor

Contractor	As del. condition	Change to
Sen. Th1 Allocating sensor 2 to thermostat function 1	3	2
Sen2 ΔT5Fct Allocating sensor 2 to ΔT function 5	4	2

System design 7 (cont.)



*1Wiring diagram, see page 49.

System design 7 (cont.)

- (A) Solar panel

(B) Solar-Divicon

(C) Draw-off points

(D) DHW circulation

(E) To the oil/gas fired boiler

(F) DHW cylinder 2

(G) DHW cylinder 1 Vitocell-L (preheating stage)

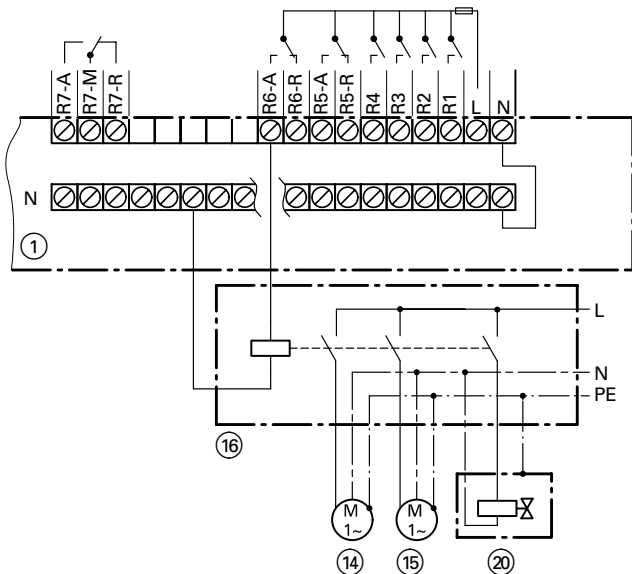
(H) Heat exchanger 2
- (K) Heating water calorifier 2

(L) Heating water calorifier 1

(M) Heat exchanger 1

Please note:
Install a minimum temperature limiter on site to avoid frost damage.

(N) Junction box (on site)



Item	Description	Part no.
Combination cylinder heating by solar energy		
①	Vitosolic 200	7170 926
②	Collector temperature sensor	Standard delivery
③	Cylinder temperature sensor (heating water calorifier 2)	Standard delivery

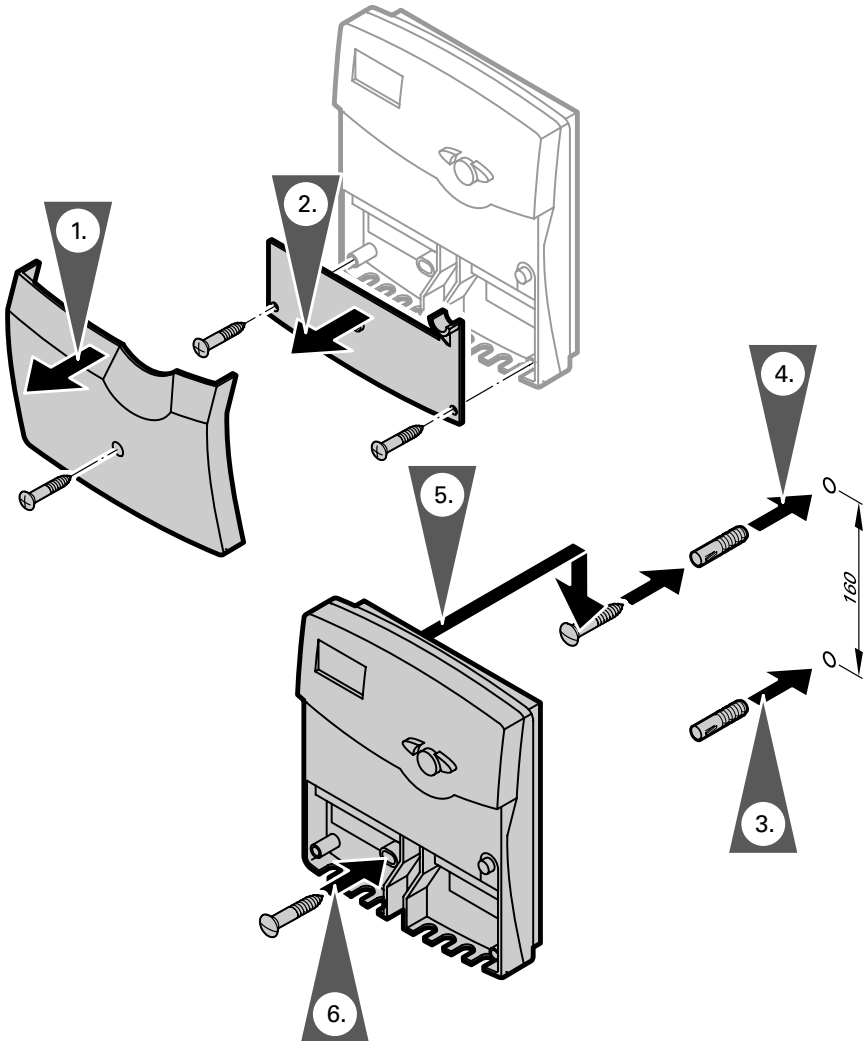
System design 7 (cont.)

Item	Description	Part no.
④	Solar circuit pump (part of Solar-Divicon)	7170 931 or 7170 932
⑤	Temperature sensor (heat exchanger 1)	Standard delivery
⑥	Solar cell	7408 877
⑦	Circulation pump for heating calorifier 1	on-site
⑧	Line regulating valve (Taco setter)	on-site
⑨	Motorised valve for calorifier circuit	on-site
	Heating DHW cylinder 2 by boiler	
⑩	Cylinder temperature sensor	Boiler control unit standard delivery
⑪	Cylinder loading pump	DHW cylinder accessories
	Heating DHW cylinder 1 (preheat stage)	
⑫	Temperature sensor (heating water calorifier 1)	7170 965
⑬	DHW cylinder 1 temperature sensor (preheat stage)	7170 965
⑭	Calorifier circuit discharge pump	on-site
⑮	Cylinder 1 loading pump (preheat stage)	on-site
⑯	Contact relay	7814 681
⑰	Calorifier circuit line regulating valve (Taco setter)	on-site
⑱	DHW line regulating valve (Taco setter)	on-site
⑲	Thermostatic mixing valve	on-site
⑳	Motorised valve for calorifier circuit	on-site
㉑	Circulation pump (relayering)	Vitaset price list

Control unit installation

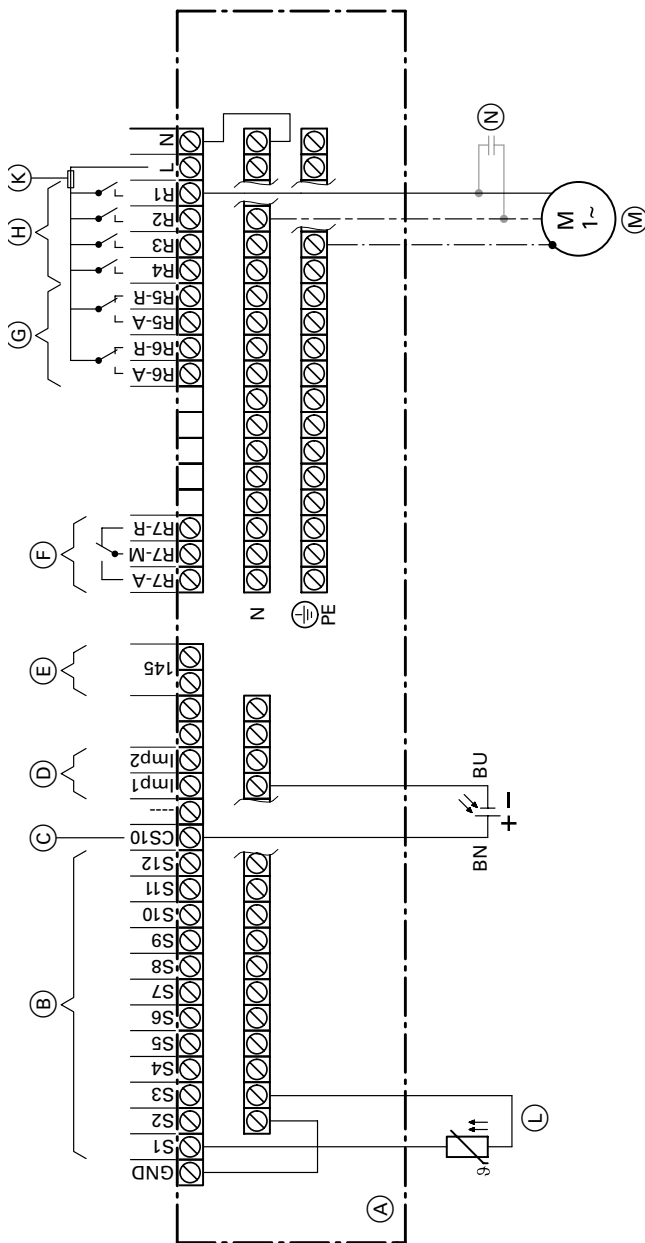
Installation location

Near the DHW cylinder, observing the electrical connections or their cable/lead lengths



Before closing the control unit, make the electrical connections in accordance with the respective system design and fit the strain relievers.

Summary of electrical connections



Ⓐ Control unit wiring chamber

② Sensor inputs for Pt 500

© Solar cell CS 10

Ⓓ Pulse counter inputs for

connection of volume measuring equipment

© KM BUS

⑦ Zero-volt relay output

③ Mechanical relays

④ Semi-conductor relays

Ⓚ Fuse, 6.3 A (slow)

① Example of sensor connection
(here: collector temperature sensor)

Ⓜ Solar circuit pump

Capacitor

Information on

semi-conductor relays

Min. capacity per relay: 20 W.

Alternatively, connect capacitors supplied parallel to and to the consumer.

Actuators (pumps and valves)

Installation



*The Solar-Divicon pump station includes the circulation pump with connecting cable.
Alternative pumps must be type-tested and fitted in accordance with manufacturer's instructions.*

Connection

In accordance with system design and page 52.
Connect the actuator common and earth conductors with the respective central terminal block.
Three-core cable with cross-section of 0.75 mm².

Rated current:

Semi-conductor relays 1 to 4: 0.5 A

Relays 5 to 7: max. 4(2) A

High limit safety cut-out

DIN 4751 and DIN 4753 make the installation of an additional high limit safety cut-out compulsory for DHW cylinders operated with solar energy, if the DHW volume is

- smaller than 30 litres/m² absorber surface when using Vitosol 100
- smaller than 100 litres/m² absorber surface when using Vitosol 200, 250 and 300.

Installation

Install the high limit safety cut-out into the cylinder cap (accessory for Vitocell 300).

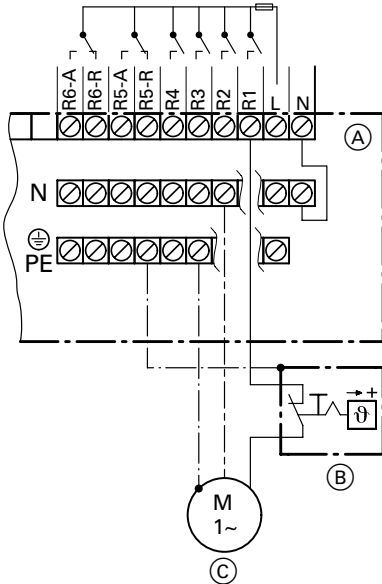


Separate installation instructions

High limit safety cut-out (cont.)

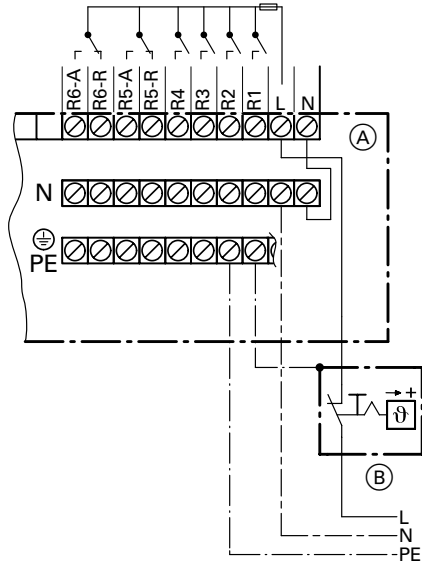
Connection

Three-core cable with cross-section of 1.5 mm².



- (A) Control unit connection chamber
- (B) High limit safety cut-out
- (C) Solar circuit pump

For system design 2:



- (A) Control unit connection chamber
- (B) High limit safety cut-out

In this case, the control unit will be switched OFF as soon as the high limit safety cut-out trips out. If control units are used in conjunction with a KM BUS, the boiler control unit will also display an appropriate fault message.

Temperature setting

As delivered condition: 120 °C
Adjustment to 95 °C required



Separate installation instructions

Solar cell

Installation



Separate installation instructions

The solar cell is marked with a letter which must be entered into Vitosolic during commissioning:



enter here.

Connection

See page 52.

⚠ *Observe polarity.*

Two-core cable with cross-section of 0.75 mm².

⚠ *Solar cells are matched up at the factory. Carry out a new match (only for **disconnected** solar cells) **only** during service work.*

Sensors

Collector temperature sensor

Installation



*Collector installation
instructions*

Connection

In accordance with system design
and page 52.

Extension:

Two-core cable with cross-section
of 1.5 mm².

Cylinder temperature sensor

The cylinder temperature is recorded indirectly through measuring the temperature of the heat transfer medium inside the indirect coil (return). This results in reheating through solar energy even if only a little DHW is drawn off.

Installation

Vitocell-B 100



*Collector installation
instructions*

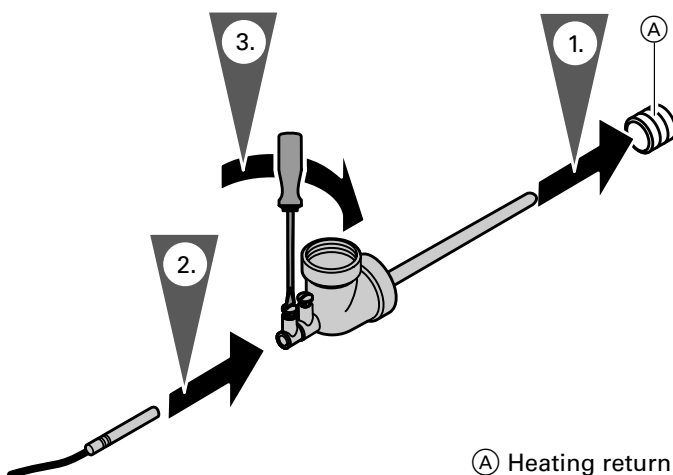
Vitocell-B 300

Connection

In accordance with system design
and page 52.

Extension:

Two-core cable with cross-section
of 1.5 mm².

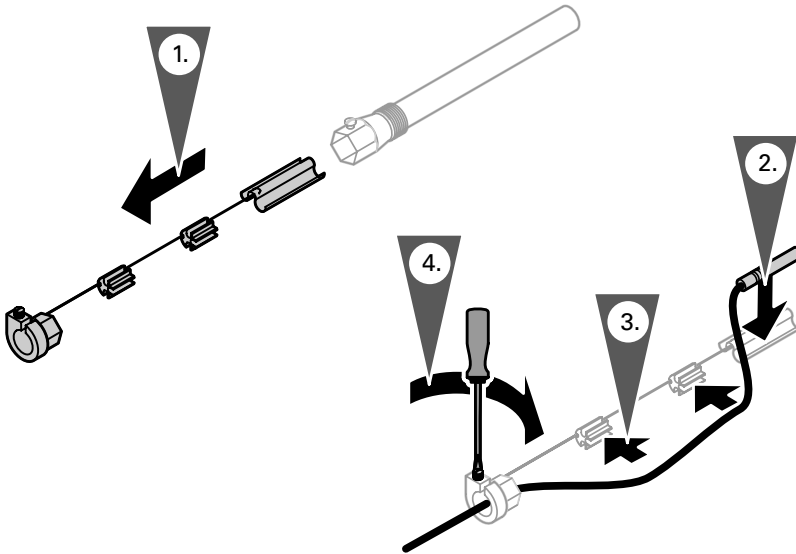


Ⓐ Heating return connection

Sensors (cont.)

Temperature sensors

Installation



Please note:

Never wrap insulating tape around sensor.

Seal-in the sensor well.

Temperature sensor (swimming pool):

Install the sensor into the swimming pool return, upstream of the heat exchanger.



For installation, see documentation of swimming pool manufacturer or heat exchanger installation instructions (if installed).

Connection

In accordance with system design and page 52.

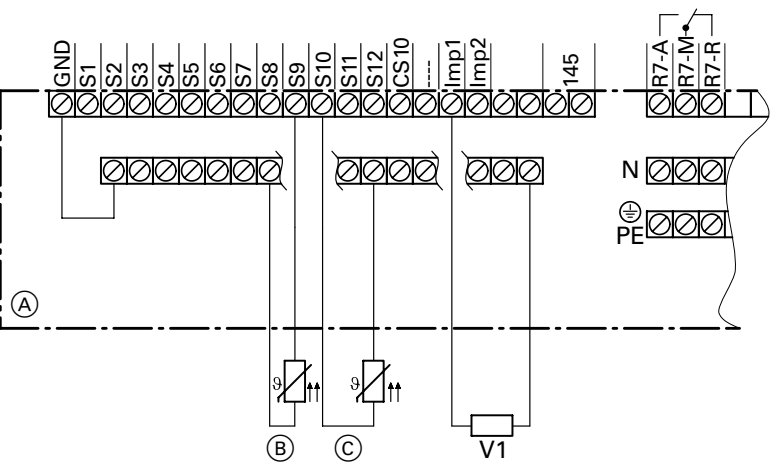
Extension:

Two-core cable with cross-section of 1.5 mm².

Heat meter extension kit (accessory)

Comprising two sensors (Pt 500) and one volume measuring device.

The flow rate and flow and return temperature are measured. A pulse is transmitted to the control unit after a fixed volume has passed the sensor. The heat volume is calculated from this pulse and the actual temperature differential.



- (A) Control unit connection chamber
- (B) Flow temperature sensor
- (C) Return temperature sensor
- V1 Volume measuring device

Connect the sensors for HM2 to S11 and S12, and the volume measuring device V2 to Imp2.

Please note:
Sensors which are already used may be encoded without affecting their function in the respective system design. The sensors supplied are then not required.

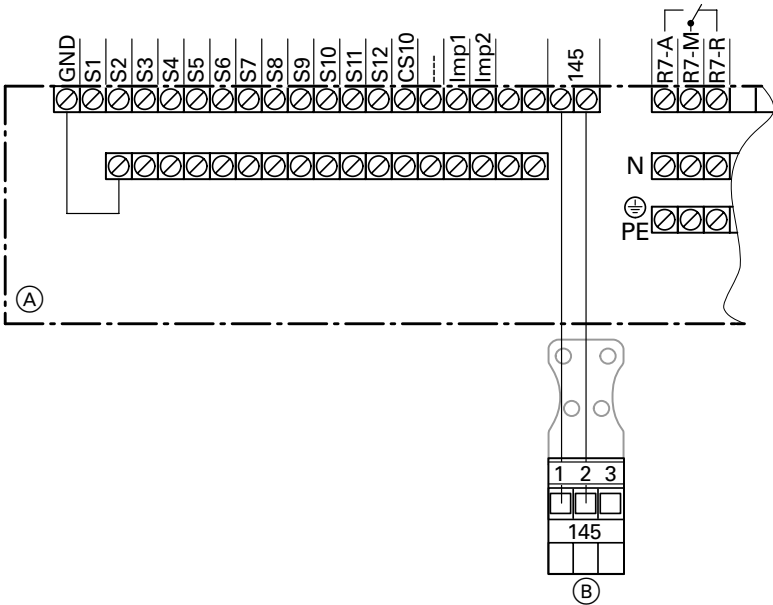
Adjustments are detailed in the chapter on commissioning.

KM BUS connection

Connections with Calotronic and Vitotronic control units via KM BUS.
Connect plug 145 (enclosed) to terminal block 145 in Vitosolic.

Replace the printed circuit board in the boiler control unit:

Control unit	Printed circuit board
Vitotronic 200, type KW1 and KW2 Vitotronic 300, type KW3 Calotronic 200	Part no. 7170 928
Vitotronic 200, type GW2 Vitotronic 300, type GW3 Calotronic 200	Part no. 7170 929
Vitotronic 333	Part no. 7170 930



- (A) Control unit connection chamber
- (B) To Vitotronic

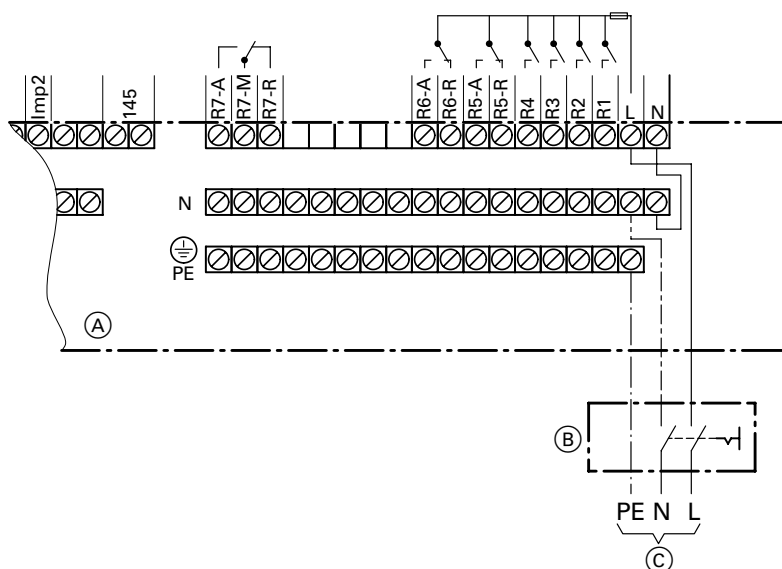
Mains electrical connection

Regulations

Carry out the mains connection and all earthing measures (e.g. fault current circuit) to IEC 364, the requirements of your local electricity supplier, VDE regulations or all local and national regulations. Protect the power supply to the control unit with a fuse of max. 16 A.

Make the mains power supply connection (230 V~) via a mains isolator (two-pole) to be provided on site.

Disconnect the system by means of a device which simultaneously separates all non-earthed conductors with at least 3 mm contact separation.



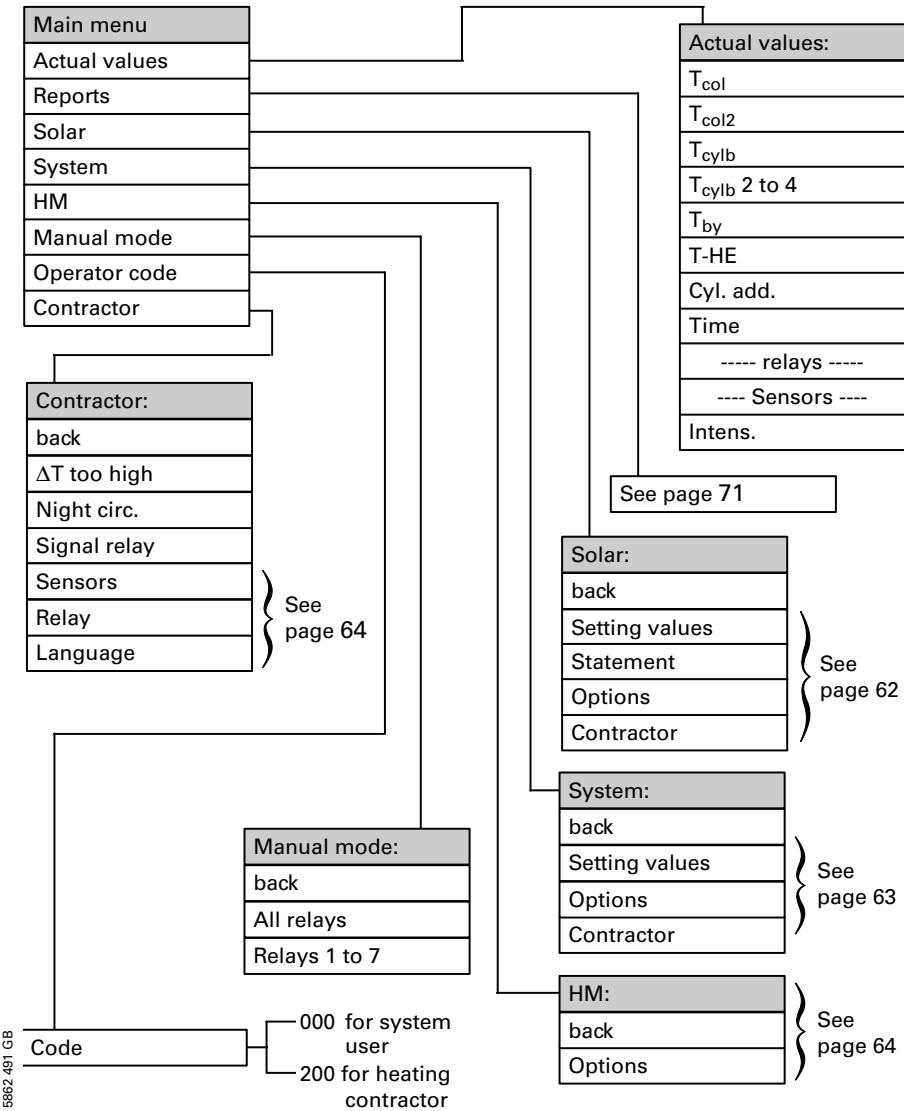
- (A) Control unit connection chamber
- (B) Mains isolator, on-site
- (C) Mains power supply 230 V~50 Hz

⚠ Safety instruction
Do not interchange cores.

Menu structure summary – Main menu

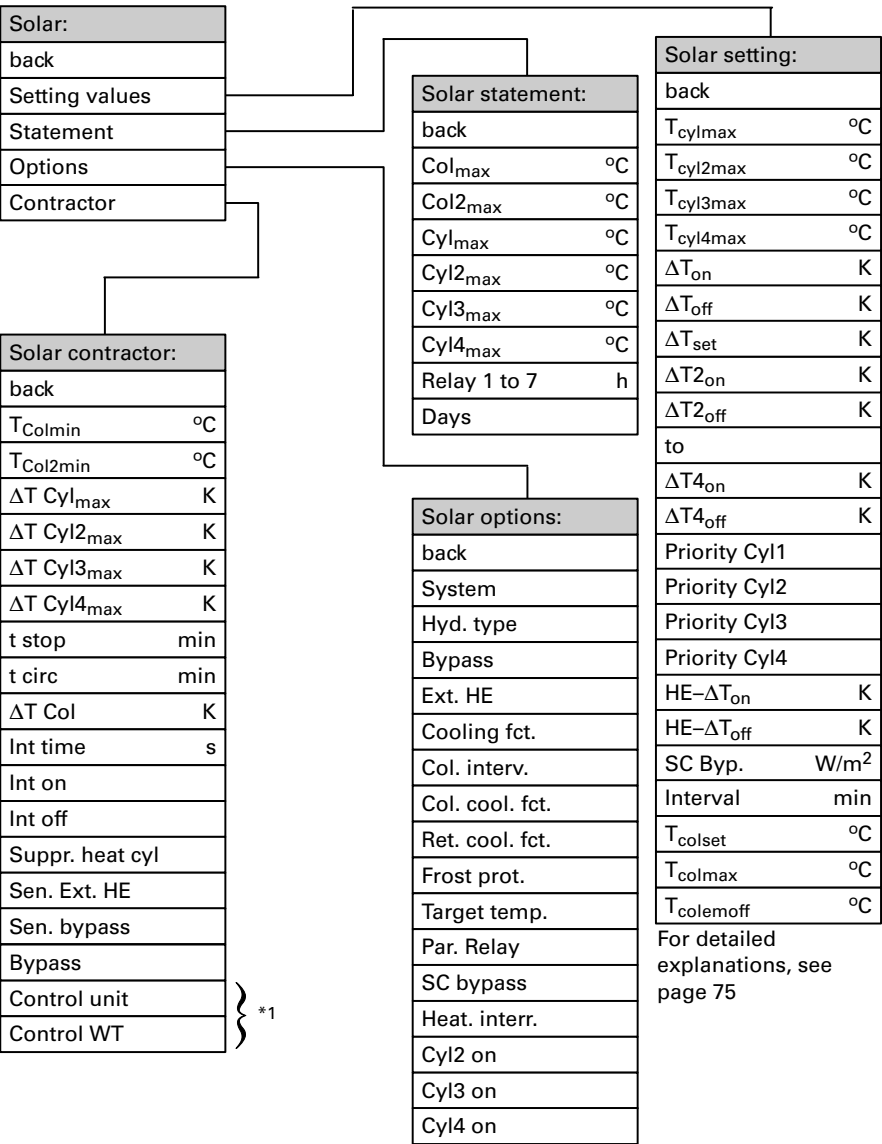
The complete menu structure of the control unit is shown in the following summary. Subject to system configuration, only those menu items will be displayed which can be adjusted.

Entry: Main menu > Operator code > Set to 200



Menu structure summary – Solar

Main menu > Solar



*1Influences the control characteristics of the solar circuit pump and the secondary pump of the external heat exchanger. Do **not** adjust.

Menu structure summary – System

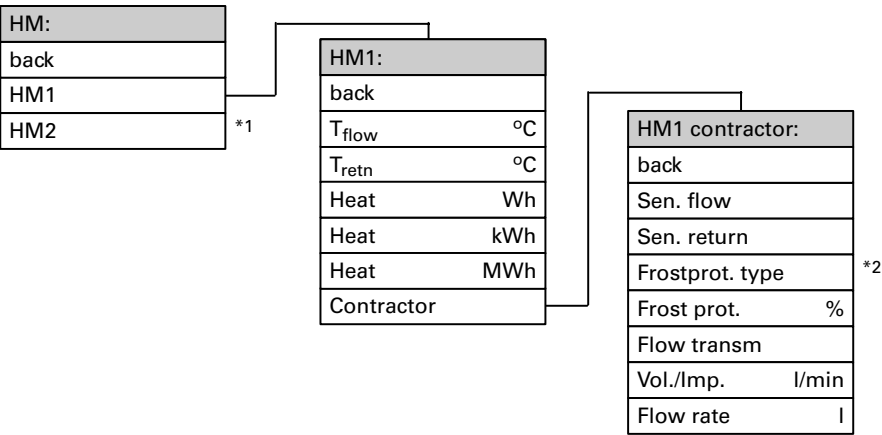
Main menu > System

System:			
back			
Setting values			
Options			
Contractor			
Sys. contractor:	System options:	System setting:	
back	back	back	
Sen. add.fct.	Add. fct.	Time	
Sen. Th1	DHWcyl. load	t start	
Sen. Th2	Thermost. 1	Th1 _{on} °C	
Sen1 ΔT5Fct	Thermost. 2	Th1 _{off} °C	
Sen2 ΔT5Fct	ΔT Fct 5	Th2 _{on} °C	
Sen. Th3	Time switch 1	Th2 _{off} °C	
Sen. Th4	Thermost. 3	ΔT5 _{on} K	
Sen1 ΔT6Fct	Thermost. 4	ΔT5 _{off} K	
Sen2 ΔT6Fct	ΔT Fct 6	Time switch 1	*1
Sen. Th5	Time switch 2	Th3 _{on} °C	
Sen. Th6	Thermost. 5	Th3 _{off} °C	
Sen1 ΔT7Fct	Thermost. 6	Th4 _{on} °C	
Sen2 ΔT7Fct	ΔT Fct 7	Th4 _{off} °C	
	Time switch 3	ΔT6 _{on} K	
		ΔT6 _{off} K	
		Time switch 2	*1
		Th5 _{on} °C	
		Th5 _{off} °C	
		Th6 _{on} °C	
		Th6 _{off} °C	
		ΔT7 _{on} K	
		ΔT7 _{off} K	
		Time switch 3	*1

*1Time window adjustment, see page 88.

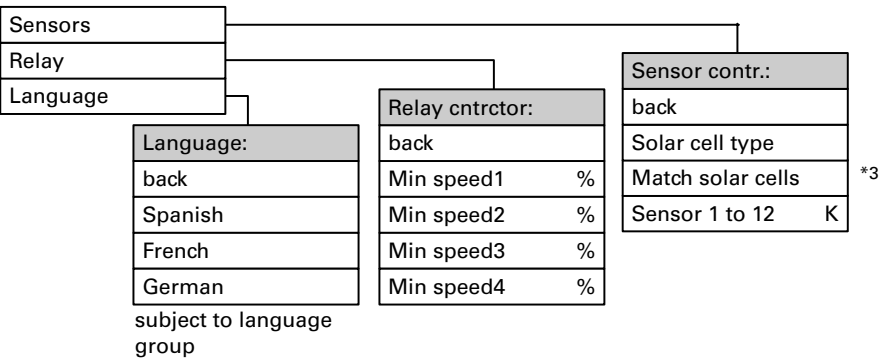
Menu structure summary – HM

Main menu > HM



Menu structure summary – Contractor

Main menu > Contractor



*1Like HM1.

*2

Setting	Heat transfer medium
0	Water
1	Propylene glycol (as delivered condition)
2	Ethylene glycol
3	Viessmann solar heat transfer medium

*3⚠ Do not press "OK".

Steps

	Page
1. Probes or sensors correctly inserted into sensor wells?	56
2. Accessories installed correctly to respective installation instructions?	
3. Electrical connections carried out correctly?	52
4. High limit safety cut-out connected to control unit and adjusted to 95 °C?	53
5. Temperature limiter connected to control unit and adjustments made (system design 5)?	
6. Commissioning control unit	66
7. Selecting system design and making all system-specific adjustments (see chapter on system designs).	
8. Selecting options	73
9. Making adjustments for operation with solar cells	66
10. Making adjustments in conjunction with energy statement	67
11. Relay test	68

Further details regarding individual steps

Commissioning the control unit

1. Start the main ON/OFF switch. The operating lamp illuminates green and the display shows the main menu (see page 61).

The display shows a four digit excerpt of the selected menu. The flashing cursor indicates the current position.

Move the cursor through the menu using $\oplus$ or $\ominus$. Confirm each selection with $\otimes$.

Change the setting/value with $\oplus$ or $\ominus$.

For values which need to be changed, the system asks a security question, which you need to confirm with "Yes".

2. Adjust the contractors menu:

Main menu

└> Operator code

└> Code: Set to 200

After commissioning, set code to "000".

3. Change the language:

Main menu

└> Contractor

└> Language

4. Set the time:

Main menu

└> System

└> Setting values

└> Set to current time

Please note:

The display reverts to the main menu if no adjustments are made for four minutes.

The system reverts to the respective menu if no changes are made seven seconds after input and security questions.

Adjustments for operation with solar cells

1. Main menu

└> Contractor

└> Sensor contr.:

Set solar cell type
value from page 55

2. Main menu

└> Solar

└> Setting values

SC byp.
Set irradiation
threshold
(see page 75).

Further details regarding individual steps (cont.)

Adjustments for energy statement

The energy statement can be carried out without heat meter extension kit (accessory).

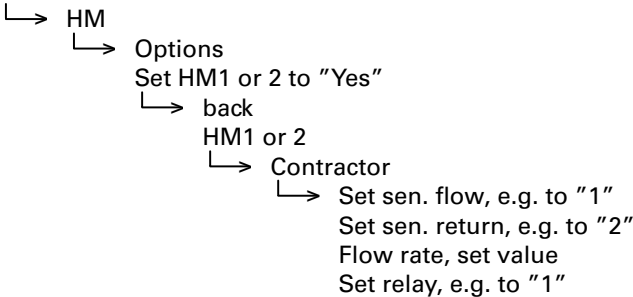
Without extension kit

The energy statement is calculated from the temperature differential between the HM flow and the HM return sensor and the set flow rate (see Vitosol service instructions). Sensors must be encoded. For this, sensors which are already used may

be utilised without affecting their function in the respective system design.

Statements are created when the output set in "Relay" is active (see below).

Main menu

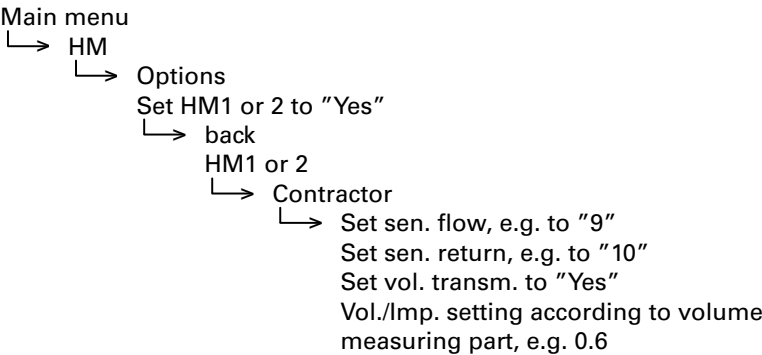


Further details regarding individual steps (cont.)

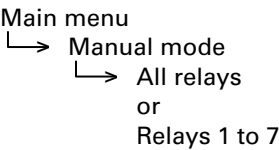
With extension kit (see page 58)

The energy statement is calculated from the temperature differential between the HM flow and the HM return temperature and the flow rate recorded by the volume measuring

device. Sensors must be encoded. For this, sensors which are already used may be utilised without affecting their function in the respective system design.



Relay test



Switching conditions:
ON
Auto
OFF

Scanning temperatures and operating conditions

Subject to system version, you can scan the following values:

1. Main menu

└─ Actual values

Display text	Description	Unit
Actual values:		
Tcol	Collector temperature	°C
Tcol 2	Collector temperature 2	°C
Tcylb	Cylinder temperature, bottom	°C
Tcyl2b	Cylinder temperature 2, bottom	°C
Tcyl3b	Cylinder temperature 3, bottom	°C
Tcyl4b	Cylinder temperature 4, bottom	°C
Tby	Bypass temperature	°C
T-HE	Ext. heat exchanger temp.	°C
Cyl. add.	Additional function	
	Time	
----- Relays -----		
Relay 1 to relay 4	Rel. speed relays 1 to 4	%
Relay 5 to Relay 7	Switching condition relays 5 to 7	
----- Sensors -----		
Sens. 1 to Sens. 12	Temperature, sensors 1 to 12	°C
Intens.	Irradiation intensity (actual irradiation) only in conjunction with solar cell	W/m ²

Back to the main menu with "OK".

Scanning temperatures and operating conditions (cont.)

- 2. Main menu
 - ↳ Solar
 - ↳ Statement

Plain text	Description	Unit
Solar statement:		
Colmax	Maximum collector temperature *1	°C
Col2max	Maximum collector temperature 2 *1	°C
Cylmax	Maximum cylinder temperature *1	°C
Cyl2max	Maximum cylinder temperature 2 *1	°C
Cyl3max	Maximum cylinder temperature 3 *1	°C
Cyl4max	Maximum cylinder temperature 4 *1	°C
Relay 1 to relay 7	Hours run of relays 1 to 7 *1	h
Days	Control unit operating days	

Scanning heat volume

See page 64.

Add the details in Wh, kWh and MWh. *1

**1These values may be reset with "OK".*

Fault messages

Faults are indicated by the operating lamp (flashes red) and may be scanned:

Main menu

↳ Reports

Reports	Cause	Remedy
No faults		
!Interruption > Sensor <	Indicated sensor has suffered a lead break or short circuit	Check respective sensor (see page 72)
!Short circuit > Sensor <		
?Night circulation	Recirculation via gravity	Check existing check valve (Solar-Divicon) or install check valve
?ΔT too high	Circulation pump faulty	Check pump connection and pump
!EEPROM	Fault during cylinder access	Switch control unit OFF and after brief interval ON again
!Real time clock	Real time clock fault	Replace control unit
SW version	—	—
HW version	—	—

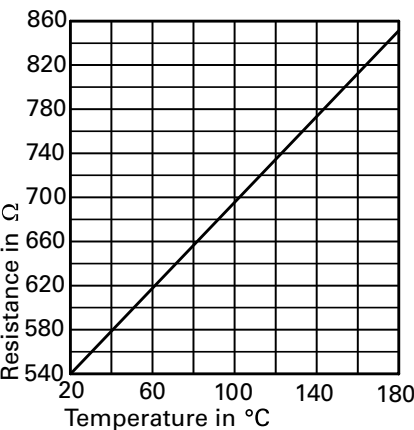
Fault acknowledgement

Place the cursor on "!" and confirm with "OK".

Please note:

The message will be redisplayed if the fault is not removed.

Checking sensors



1. Disconnect the relevant sensor and measure the resistance.

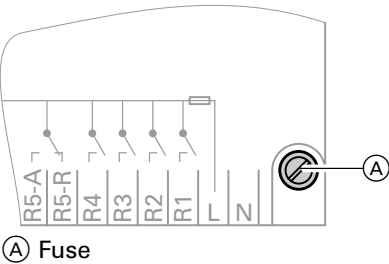
Temperature in °C	Resistance in Ω
20	546
40	578
50	597
60	616

2. Compare measurement with the actual temperature displayed (for scanning, see page 69). Check the installation and replace sensor if necessary in the event of severe deviation.

Specification

- Protection level: IP 20
- Permiss. ambient temperature
 - during operation
 - Collector temperature sensor: -20 to +180 °C
 - Temperature sensors: 0 to + 90 °C
 - during storage and transport: -20 to + 70 °C

Changing the fuse



Open the connection chamber of the control unit (see page 51). Replacement fuse is inside the pack. F: 6.3 A, 250 V (slow).

Summary of additional functions

Further functions may be added to each system design.
Functions for which the same relay output is used can **only** be utilised alternately.

Main menu
 ↳ Solar
 ↳ Options

Please note:
 Select "Yes" to activate the required function.

Options	Plain text/ as delivered condition		Relay	Possible with design							Page
				1	2	3	4	5	6	7	
Bypass version			R5								
1	Bypass	No		x	–	x ^{*1}	x	x ^{*1}	x	x	77
2	SC bypass	No		–	–	–	–	–	–	x	78
3	Bypass and SC bypass	No		x	–	x ^{*1}	x	x ^{*1}	x	x	79
External heat exchanger	Ext. HE	No	R2 or R3	x	x	–	x ^{*2}	–	x ^{*2}	–	80
Cooling function	Cooling fct.	No	—	x	x	x	x	x	x	x	80
Special functions of tube collectors	Col.interv.	No	—	x	x	x	x	x	x	x	80
Collector cooling functions	Col.cool.fct.	No	—	x	x	x	x	x	x	x	81
Return cooling function	Ret.cool.fct.	No	—	x	x	x	x	x	x	x	81
Frost protection	Frost prot.	No	—	x	x	x	x	x	x	x	82
Parallel relay	Par. relay	No	R5	x	x	x	x	x	x	x	82
Reloading suppression	Heat.interr.	No	R7	x	x	x	x	x	x	x	82
Cylinder 2 ON	Cyl 2 on	Yes	R4	–	–	x	–	x	–	–	84

^{*1}Connect the reference sensor (bypass sensor) to S7, and adjust to 7 in Main menu/Solar/Contractor for "Sens. bypass".

^{*2}Connect the reference sensor (external heat exchanger sensor) to S8, and adjust to 8 in Main menu/Solar/Contractor for "Sens. Ext. HE".

Summary of additional functions (cont.)

Main menu

↳ System
↳ Options

Please note:

Select "Yes" to activate the required function.

Options	Display text/as delivered condition		Relay	Possible with design								Page
				1	2	3	4	5	6	7		
Additional DHW heating function	Add. fct.	No	R5	x	x	x	x	x	x	x	85	
Cylinder loading	DHWcyl.load.	No	R6	x	–	–	–	x	–	–	85	
Thermostat 1	Thermost. 1	No	R3	x	x	–	x	–	x	–	87	
Thermostat 2	Thermost. 2	No		x	x	–	x	–	x	–		
ΔT5 control unit	ΔT Fct 5	No		x	x	–	x	–	x	–		
Time switch 1	Time switch 1	No		x	x	–	x	–	x	–		
Thermostat 3	Thermost. 3	No	R6	x	x	–	–	–	–	–		
Thermostat 4	Thermost. 4	No		x	–	–	–	x	–	–		
ΔT6 control unit	ΔT Fct 6	No		x	–	–	–	–	–	–		
Time switch 2	Time switch 2	No		x	–	–	–	–	–	–		
Thermostat 5	Thermost. 5	No	R7	x	x	x	x	x	x	x		
Thermostat 6	Thermost. 6	No		x	x	x	x	x	x	x		
ΔT7 control unit	ΔT Fct 7	No		x	x	x	x	x	x	x		
Time switch 3	Time switch 3	No		x	x	x	x	x	x	x		

Signal relay

Main menu

↳ Contractor
↳ Signal relay

Relay 7 (zero-volt contact) can be utilised as central fault message output **alternative** to function

- "Reloading suppression" (see page 82)
- or
- "Thermostat function 5 and 6" or "ΔT7 control unit" (see page 87).

Summary of system parameters

These values can only be adjusted if the respective function is activated.

Main menu

↳ Solar

↳ Setting values

Display text	Description	As del. condition	Setting range	Set to
T_{cylmax}	Maximum cylinder temperature (see page 76)	60 °C	20 to 85 °C	
$T_{\text{cyl2max, ...}}$	Maximum cylinder temperature cylinders 2 to 4	60 °C	20 to 85 °C	
$\Delta T_{\text{on}}^{*1}$ $\Delta T_{\text{off}}^{*2}$	Start-up temp. differential Shutdown temp. differential for the solar circuit pump	5 K 3 K	1.5 to 20 K 1.0 to 19.5 K	
$\Delta T_{\text{on}}^{*1}$ $\Delta T_{\text{off}}^{*2}$ to $\Delta T_{\text{on}}^{*1}$ $\Delta T_{\text{off}}^{*2}$	Start-up temp. differential Shutdown temp. differential for additional consumers	5 K 3 K	1.5 to 20 K 1.0 to 19.5 K	
Priority Cyl 1 to Cyl 4	Cylinder priority control (see page 76)	1, 2, 3, 4	see page 76	
HE $\Delta T_{\text{on}}^{*1}$ HE $\Delta T_{\text{off}}^{*2}$	Start-up temp. differential Shutdown temp. differential for external heat exchanger	5 K 3 K	1.5 to 20 K 1.0 to 19.5 K	
SC byp.	Irradiation threshold ^{*3}	200 W/m ²	100 to 500 W/m ²	
Interval	Idle time for tube collector special function (see page 80)	30 min.	1 to 60 min	

^{*1} ΔT_{on} can be a min. of 0.5 K higher than ΔT_{off} .

^{*2} ΔT_{off} can be a min. of 0.5 K lower than ΔT_{on} .

^{*3}For Vitosol 100: 210 W/m².
For Vitosol 200, 250, 300: 130 W/m².

Summary of system parameters (cont.)

Display text	Description	As del. condition	Setting range	Set to
T _{colset}	Set collector temperature	65 °C	20 to 110 °C	
T _{colmax}	Maximum collector temperature (see page 81)	120 °C	110 to 150 °C	
T _{colemoff}	Collector shutdown temperature	130 °C	115 to 180 °C (at 200 °C, this function is inactive)	

Maximum cylinder temperature

The respective circulation pump is switched OFF if the maximum cylinder temperature T_{cylmax} is exceeded, to prevent the DHW cylinder from being overheated. A safety shutdown is implemented when the cylinder safety temperature of 90 °C (fixed) has been reached.

DHW priority

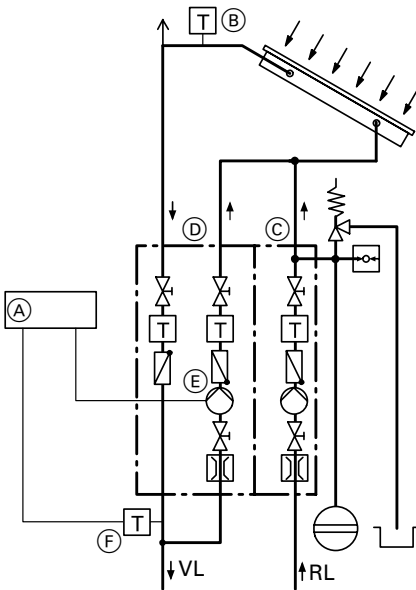
When selecting "Priority Cyl 1: 1"
"Priority Cyl 2: 2"
etc.,
the DHW cylinders are heated in numerical sequence, until their respective maximum cylinder temperature T_{cylmax} has been reached.
DHW cylinders with the same priority are heated simultaneously.

Bypass

Version 1 – Bypass control with collector temperature sensor and bypass sensor

Vitosolic 200 measures the collector temperature via the collector temperature sensor. The bypass circuit pump is switched ON, if the set temperature differential ΔT_{on} between the collector temperature sensor and the cylinder temperature sensor is exceeded. The solar circuit pump is switched ON and that of the bypass circuit is

switched OFF, if the temperature differential between the bypass sensor and the cylinder temperature sensor is exceeded by 2.5 K. If this differential drops below 1.5 K, and ΔT_{on} is still exceeded, then the solar circuit pump is switched OFF and the bypass pump is switched ON.



Settings:

1. Main menu
 - Solar
 - Solar options
 - Set bypass to "Yes"
2. Main menu
 - Solar
 - Solar contractor
 - Set bypass to "Pump"

- (A) Control unit connection chamber
- (B) Collector temperature sensor
- (C) Solar pump line
- (D) Solar-Divicon
- (E) Circulation pump, bypass circuit (R5)
- (F) Bypass sensor (S3 or S7)

Please note:

The pump of Solar-Divicon is used as the bypass circuit circulation pump and that of the solar pump line as the solar circuit pump.

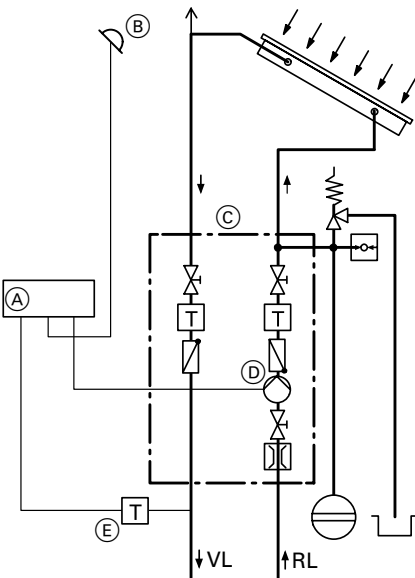
Bypass (cont.)

Version 2 – Bypass circuit with solar cell

In this version, the solar circuit pump also fulfils this function. Vitosolic 200 measures the radiation intensity via the solar cell.

The solar circuit pump is switched ON if the irradiation threshold set on Vitosolic 200 is exceeded.

The pump is switched OFF if the irradiation level falls below the selected switching threshold (drop-out delay approx. 2 minutes).



Settings:

1. Main menu
 - ↳ Solar
 - ↳ Solar options
 - ↳ Set SC bypass to "Yes"

2. Main menu
 - ↳ Solar
 - ↳ Solar setting:
 - ↳ SC bypass Set value (see page 75)

- Ⓐ Control unit connection chamber
- Ⓑ Solar cell
- Ⓒ Solar-Divicon
- Ⓓ Circulation pump, solar circuit (R1)
- Ⓔ Collector temperature sensor (S1)

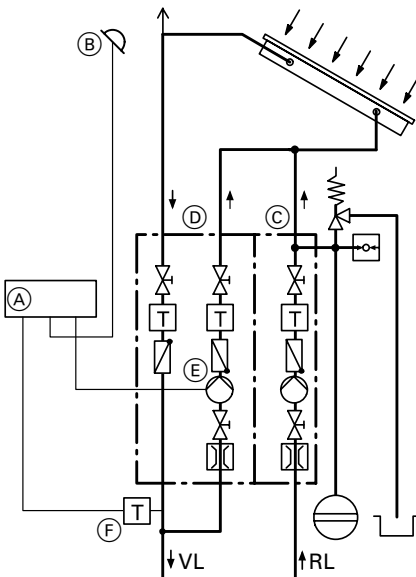
Bypass (cont.)

Version 3 – Bypass control with solar cell and collector temperature sensor

Vitosolic 200 measures the radiation intensity via the solar cell. The bypass circuit circulation pump is switched ON if the irradiation threshold value set on Vitosolic 200 is exceeded. The bypass circuit pump is switched OFF and the solar circuit pump is switched ON, if the

set temperature differential ΔT_{on} between the collector temperature sensor and the cylinder temperature sensor is exceeded.

The bypass pump is switched OFF if the irradiation level falls below the selected switching threshold (drop-out delay approx. 2.5 minutes).



Settings:

1. Main menu
 - ↳ Solar
 - ↳ Solar options
 - ↳ Bypass "Yes"
 - ↳ SC bypass "Yes"
2. Main menu
 - ↳ Solar
 - ↳ Solar setting:
 - ↳ SC bypass Set value (see page 75)
3. Main menu
 - ↳ Solar
 - ↳ Solar contractor
 - ↳ Sen. bypass "1"

- (A) Control unit connection chamber
- (B) Solar cell
- (C) Solar pump line
- (D) Solar-Divicon

- (E) Circulation pump, bypass circuit (R5)
- (F) Collector temperature sensor (S1)

Please note:

The pump of Solar-Divicon is used as the bypass circuit pump and that of the solar pump line as the solar circuit pump.

External heat exchanger

The selected relay switches the consumer ON if the set start-up temperature differential is exceeded, and switches it OFF if the actual temperature drops below the shutdown temperature differential.

In design 2, the secondary pump is connected to R3, in all other cases to R2.

$\Delta T_{\text{on/off}}$ (differential between S1 and S3) switches the primary pump (R1).

$\Delta T_{\text{WT on/off}}$ (differential between S2 and S3) switches the secondary pump (R2 or R3).

Cooling function

Function for dissipating excess heat. When the maximum cylinder temperature T_{cylmax} and the start-up temperature differential ΔT_{on} have been reached, the solar circuit pump

and a consumer connected to R4 are switched ON, and switched OFF if the actual temperature drops below the shutdown temperature differential ΔT_{off} .

Special functions of tube collectors

Activate in systems with unfavourably positioned collector temperature sensor. The solar circuit pump is activated every 30 minutes (adjustable in

Main menu/Solar/Settings/Interval, see page 75) for 30 seconds, to prevent a time delay when recording the collector temperature. From 22:00 to 06:00 h **inactive**.

Collector cooling functions

The solar circuit pump is switched OFF if the selected maximum cylinder temperature T_{cylmax} has been reached.

If the collector temperature rises to the set maximum collector temperature T_{colmax} (Main menu/ Solar/Settings), then the pump will be switched ON, until the actual temperature falls 5 K below this value. In this case, the cylinder temperature may continue to rise, but no higher than 90 °C (cylinder safety shutdown).

Please observe safety instructions on page 5.

Please note:

In every case, ensure the fail-safe nature of the solar heating system through correct sizing of the diaphragm expansion vessel, even if the collector temperature rises after all limit temperatures have been reached.

In the event of stagnation or if the collector temperature continues to rise, the solar circuit pump will be disabled or switched OFF (collector emergency stop T_{colem}), to prevent thermal overloading of connected components.

Return cooling function

When the collector cooling function has been activated, the cylinder temperature may continue to rise, but no higher than 90 °C (cylinder safety shutdown).

In the evening, the pump continues to operate until the DHW cylinder has cooled down to the maximum cylinder temperature T_{cylmax} via the collector and interconnecting pipework.

Please observe safety instructions on page 5.

Please note:

In every case, ensure the fail-safe nature of the solar heating system through correct sizing of the diaphragm expansion vessel, even if the collector temperature rises after all limit temperatures have been reached.

In the event of stagnation or if the collector temperature continues to rise, the solar circuit pump will be disabled or switched OFF (collector emergency stop T_{colem}), to prevent thermal overloading of connected components.

Frost protection

At a collector temperature below +4 °C, the solar circuit pump will be started to prevent collector damage.

The pump is switched OFF when +5 °C has been reached.

Parallel relay

Relay R5 is switched ON when the solar circuit pump (R1) operates.

R5 can, for example, be used to control a diverter valve.

Suppression of reheating by boiler

Systems with control units connected via KM BUS

Vitotronic 200, type KW1^{*1}, KW2^{*1} and GW1^{*2}

Vitotronic 300, type KW3^{*1} and GW2^{*2}

Vitotronic 333^{*3}

Calotronic 200^{*1}

Connection of the KM BUS to input **145** in the solar control unit (see page 59).

Reheating of the DHW cylinder by the boiler will be suppressed by the solar control unit, if the solar circuit pump is operating.

Coding address "67" in the boiler

control unit defaults a third set DHW temperature (setting range: 10 to 95 °C). This value must be **below** the first set DHW temperature.

The DHW cylinder will only be heated by the boiler if this set value cannot be reached by the solar heating system.

^{*1}Printed circuit board, part no. 7170 928 required.

^{*2}Printed circuit board, part no. 7170 929 required.

^{*3}Printed circuit board, part no. 7170 930 required.

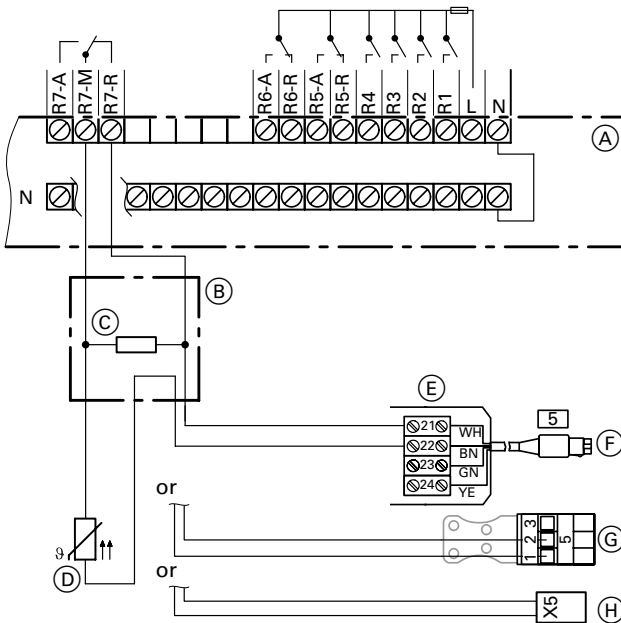
Suppression of reheating by boiler (cont.)

Systems with additional Viessmann control units

Reheating of the DHW cylinder by the boiler will be suppressed by the solar control unit if the solar circuit pump is operating. A 10K higher actual DHW temperature is

simulated via a resistor. The DHW cylinder will only be heated by the boiler if this actual temperature cannot be reached by the solar heating system.

Cylinder temperature sensor as PTC

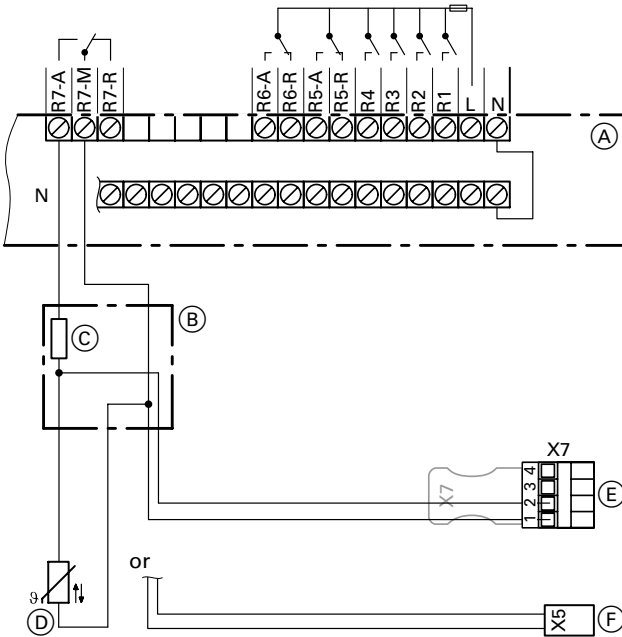


- (A) Control unit connection chamber
- (B) Junction box (on site)
- (C) Resistance 20 Ω , 0.25 W (on site)
- (D) Cylinder temperature sensor of boiler control unit (PTC)
- (E) Connecting cable, Part no. 7450 061

- (F) Dekamatik
Viessmann Trimatik
Duomatik
Unomatik
- (G) Vitotronic
- (H) Eurolamatik

Suppression of reheating by boiler (cont.)

Cylinder temperature sensor as NTC



- (A) Control unit connection chamber
- (B) Junction box (on site)
- (C) Resistance 10 k Ω , 0.25 W (on site)

- (D) Cylinder temperature sensor of boiler control unit (NTC)
- (E) Vitodens and Vitopend
- (F) Pendola

Cylinder 2 ON

This function enables a second consumer (e.g. calorifier or swimming pool) to be taken out of the control unit.

Break or short circuit of cylinder temperature sensor T_{cy12u} **is no longer** notified.

Cylinder loading

This function is achieved via thermostat 3 (S5) and 4 (S6) or relay R6.

R6 starts if the temperatures at thermostat 3 and 4 fall below $Th_{3_{on}}$ (Main menu/System/Settings). R6 is switched OFF if $Th_{3_{off}}$ is exceeded.

This function enables a certain physical range of the DHW cylinder to be heated, which can be defined through the sensor location.

Additional DHW heating function

Additional function in conjunction with Vitotronic control units and KM BUS

- At the boiler control unit,
- a second set DHW temperature must be encoded, and
 - the fourth DHW phase for DHW heating must be activated.

This signal is transmitted via the KM BUS (for connection, see page 59) to the solar control unit, and the circulation pump is switched ON (connection to R5).



Vitotronic installation and service instructions

Additional function only with Vitosolic 200

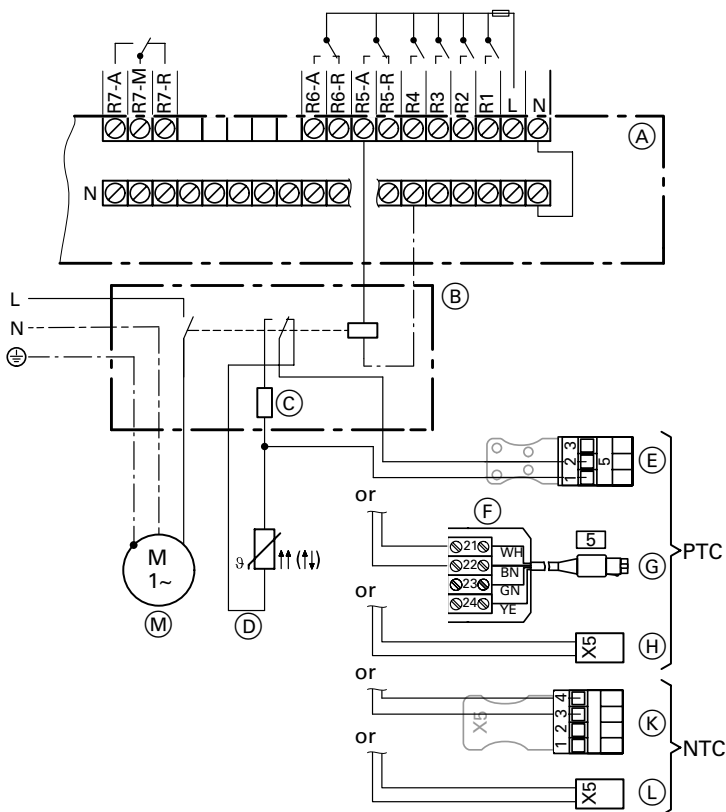
For systems with a cylinder capacity **above 400 litres**, the entire water content must be heated to 60 °C once every day. For this, an additional circulation pump may be started (connection to R5).

The circulation pump is started at the adjustable time "t start" (Main menu/System/Settings, see page 87), if the DHW cylinder has not been heated to 60 °C at least once every day.

Additional DHW heating function (cont.)

Additional function in conjunction with additional Viessmann control units

A DHW temperature of approx. 35 °C is simulated via a resistor.



(A) Control unit connection chamber

(B) Contactor relay, part no. 7814 681

(C) Resistance for

PTC: 560 Ω

NTC: 8.2 kΩ

(D) Cylinder temperature sensor
of boiler control unit

(E) Vitotronic

(F) Connecting cable,
part no. 7450 061

(G) Dekamatik

Viessmann Trimatik

Duomatik

Unomatik

(H) Eurolamatik

(K) Vitodens and Vitopend

(L) Pendola

(M) Circulation pump

Thermostat function, ΔT control unit and time switches

These functions are only available subject to the inputs and outputs not being allocated in the basic design.

The following allocation applies:

Thermostat 1 → S3
 Thermostat 2 → S4
 $\Delta T5$ control unit → S3 – S4
 Time switch 1

} Relay R3

Thermostat 3 → S5
 Thermostat 4 → S6
 $\Delta T6$ control unit → S5 – S6
 Time switch 2

} Relay R6

Thermostat 5 → S7
 Thermostat 6 → S8
 $\Delta T7$ control unit → S7 – S8
 Time switch 3

} Relay R7

Thermostat function

Subject to times (adjusted in the allocated time switch), the corresponding relay switches ON when Th_{on} has been reached, and OFF when Th_{off} has been reached. Adjusting values (see below).

ΔT control unit

Subject to times (adjusted in the allocated time switch), the corresponding relay switches ON when ΔT_{on} has been exceeded, and OFF when the actual value drops below ΔT_{off} . Adjusting values (see page 88).

Time switches

For the thermostat function or ΔT control unit, three time windows can be activated. The corresponding relay switches ON at "t on" and OFF at "t off, etc.

Time window adjustment (see page 88).

Main menu
 ↳ System
 ↳ Setting values

Setting values	Display text/ as delivered condition	Setting range	Set to
Start time for additional function for DHW heating	t start	17:00	00:00 to 23:45
Thermostat start-up temp.	$Th1_{on}$	40 °C	0 to 150 °C
Thermostat shutdown temp.	$Th1_{off}$	45 °C	
	$Th2_{on}$	40 °C	
	$Th2_{off}$	45 °C	

Thermostat function, ΔT control unit and time switches (cont.)

Setting values	Display text/ as del. condition		Setting range	Set to
Start-up temp. differential	ΔT_{5on}	5 K	1.5 to 20 K	
Shutdown temp. differential	ΔT_{5off}	3 K	1.0 to 19.5 K	
Time window	Time switch 1:			
	t1-on	00:00	00:00 to 23:45	
	t1-off	00:00	00:00 to 23:45	
	t2-on	00:00	00:00 to 23:45	
	t2-off	00:00	00:00 to 23:45	
	t3-on	00:00	00:00 to 23:45	
	t3-off	00:00	00:00 to 23:45	
Thermostat start-up temp.	Th3 _{on}	40 °C	0 to 150 °C	
Thermostat shutdown temp.	Th3 _{off}	45 °C		
	Th4 _{on}	40 °C		
	Th5 _{off}	45 °C		
Start-up temp. differential	ΔT_{6on}	5 K	1.5 to 20 K	
Shutdown temp. differential	ΔT_{6off}	3 K	1.0 to 19.5 K	
Time window	Time switch 2:			
	t1-on	00:00	00:00 to 23:45	
	t1-off	00:00	00:00 to 23:45	
	t2-on	00:00	00:00 to 23:45	
	t2-off	00:00	00:00 to 23:45	
	t3-on	00:00	00:00 to 23:45	
	t3-off	00:00	00:00 to 23:45	
Thermostat start-up temp.	Th4 _{on}	40 °C	0 to 150 °C	
Thermostat shutdown temp.	Th4 _{off}	45 °C		
	Th5 _{on}	40 °C		
	Th5 _{off}	45 °C		
Start-up temp. differential	ΔT_{7on}	5 K	1.5 to 20 K	
Shutdown temp. differential	ΔT_{7off}	3 K	1.0 to 19.5 K	
Time window	Time switch 3			
	t1-on	00:00	00:00 to 23:45	
	t1-off	00:00	00:00 to 23:45	
	t2-on	00:00	00:00 to 23:45	
	t2-off	00:00	00:00 to 23:45	
	t3-on	00:00	00:00 to 23:45	
	t3-off	00:00	00:00 to 23:45	

Parts list

When ordering spare parts:

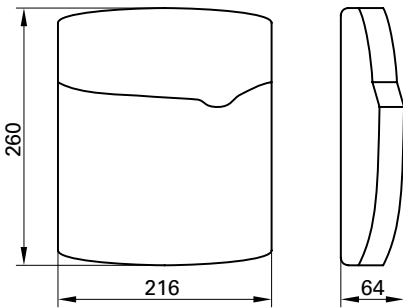
Quote the part no. and the item no. of the required part (as per this parts list).

Obtain common parts from your local supplier.

Parts

- 010 Collector temperature sensor
- 020 Cylinder temperature sensor
- 030 Strain relief pack, fuse, capacitor
- 040 Fuse, 6.3 A (slow) (5 pieces)
- 050 Installation and service instructions
- 060 Operating instructions

Specification



Rated voltage: 230 V~
 Rated frequency: 50 Hz
 Rated current: 6 A
 Power consumption: 6 W
 Safety class: II
 Protection: IP 20 to EN 60529, ensure through design and installation
 Function: Type 1B to EN 60730-1

Permissible ambient temperature

- in operation: 0 to +40 °C
Installation in living accommodation and boiler rooms (normal ambient conditions)
- during storage and transport: -20 to +65 °C

Rated relay output breaking capacity at 230V

- Semi-conductor relays 1 to 4: 0.5 A
- Relays 5 to 7: max. 4(2) A
- Total: max. 6 A

Declaration of conformity

We, Viessmann Werke GmbH & Co KG, D-35107 Allendorf, declare as sole responsible body that the product

Vitosolic 200

conforms to the following standards:

EN 55 014-1

EN 60 730-1

**This product is identified in
accordance with the following
guidelines:**

89/336/EEC

73/ 23/EEC

as follows:

CE

Allendorf, 1 August 2003

Viessmann Werke GmbH & Co KG

A handwritten signature in black ink, appearing to read 'M. Sommer', with a long horizontal stroke extending to the right.

pp. Manfred Sommer

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Applicability

For control unit
Vitosolic 200, part no. 7170 926

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